NATIONAL INSTITUTE
OF STANDARDS AND TECHNOLOGY

NATIONAL TECHNICAL INFORMATION SERVICE

FISCAL YEAR 2025

BUDGET SUBMISSION TO CONGRESS

DEPARTMENT OF COMMERCE
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
Budget Estimates, Fiscal Year 2025
Congressional Submission

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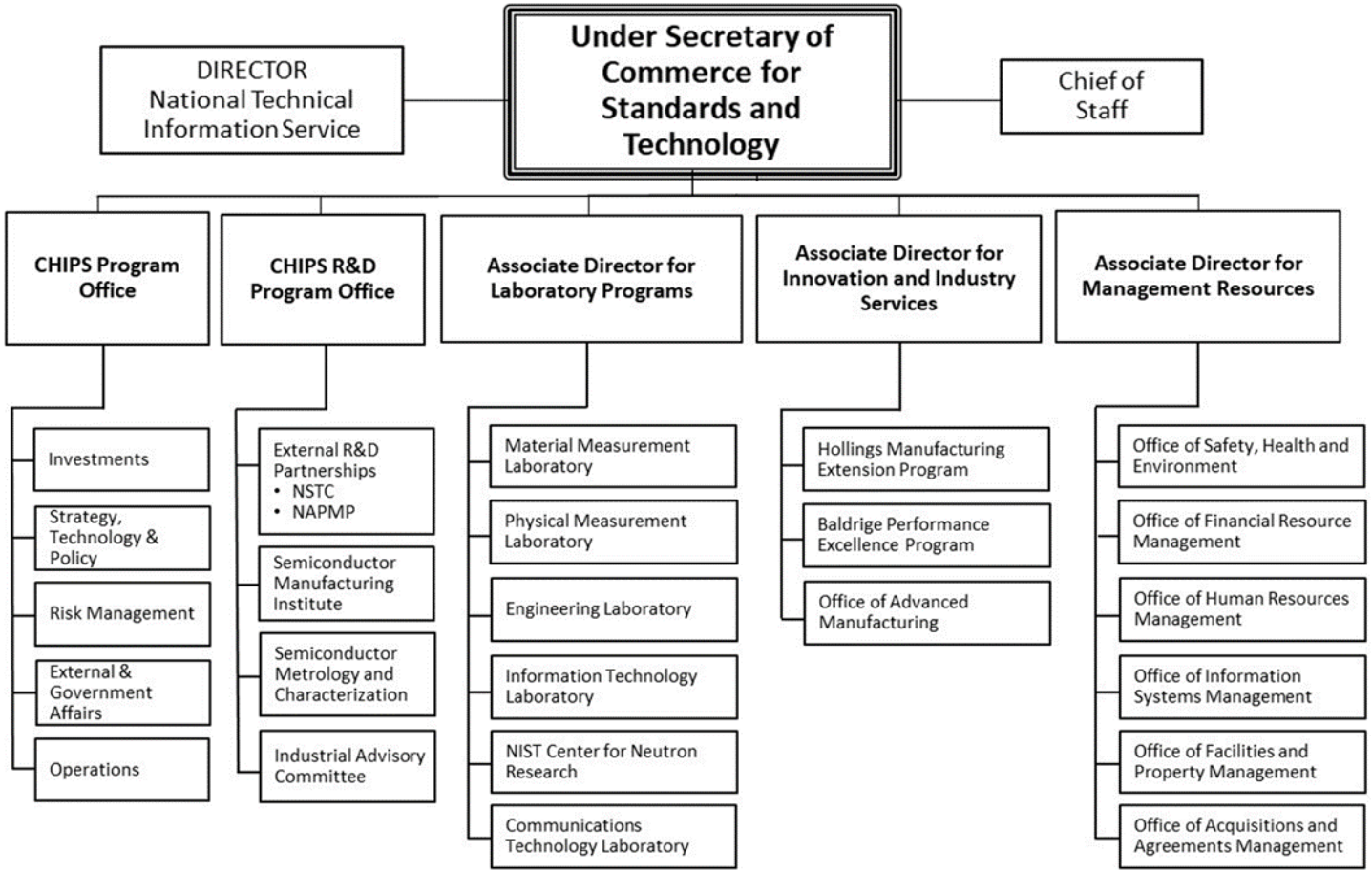
U.S. Department of Commerce
National Institute of Standards and Technology*



*The Department of Commerce notified Congress of the organizational change on February 13, 2023, and has implemented the revisions in accordance with the FY 2021 NDAA (P.L. 116-283), and the CHIPS Act of 2022 (P.L. 117-167).

Department of Commerce
National Institute of Standards and Technology
Budget Estimates, Fiscal Year 2025

Executive Summary

The National Institute of Standards and Technology (NIST) Fiscal Year 2025 (FY 2025) discretionary budget request is $1,498.500 million, a decrease of $128.785 million from the FY 2024 Annualized Continuing Resolution level, including $975.0 million for STRS, $212.0 million for ITS, and $311.5 million for CRF. NIST uses $394.8 million in savings from eliminating one-time Congressional external projects funding to make investments across NIST. The FY 2025 discretionary request for NIST is summarized below by appropriation account.

1. Scientific and Technical Research and Services (STRS):

FY 2024 Estimate ($ in thousands)	**$953,000**
Inflationary Adjustments	**25,998**
Removal of One-time Congressional External Community Projects	**-62,532**
Standards Coordination and Special Programs Reduction to Offset Inflationary Costs	**-3,076**
STRS Program Increases Total	**61,610**
Meeting the National Need for Artificial Intelligence Research, Testing, and Standards	*47,700*
Advancing Quantum Information Science and Technology Readiness	*13,910*
Total STRS FY 2025 Request	**$975,000**

2. Industrial Technology Services (ITS):

FY 2024 Estimate ($ in thousands)	**$212,000**
Inflationary Adjustments	**1,176**
Hollings Manufacturing Extension Partnership (MEP) Program Offset for Inflationary Costs	**-911**
Manufacturing USA (Mfg. USA) Program Offset for Inflationary Costs	**-265**
Total ITS FY 2025 Request	**$212,000**

3. Construction of Research Facilities (CRF):

FY 2024 Enacted ($ in thousands)	**$462,285**
Inflationary Adjustments	**3,223**
Removal of One-time Congressional External Community Projects	**-332,285**
Building 245 Modernization	**178,277**
Total CRF FY 2025 Request	**$311,500**

Performance:

For current GPRA targets please see the FY 2023/2025 Annual Performance Plan and Report.

Adjustments:

Inflationary Adjustments

NIST's base includes a total of $30.397 million to account for the full funding requirement for inflationary adjustments to current programs for NIST's activities. This includes inflationary increases for labor and non-labor activities including benefits and rent charges from the General Services Administration.

Department of Commerce
National Institute of Standards and Technology
FY 2025 PROGRAM INCREASES / DECREASES / TERMINATIONS
(Dollar amounts in thousands)
(By Appropriation, Largest to Smallest)

Increases

Page No In CJ	Appropriations	Budget Program	Title of Increase	Positions	Budget Authority
NIST-105	Construction of Research Facilities	Construction and Major Renovations (CMR)	Building 245 Modernization	0	$178,277
NIST-26	Scientific and Technical Research and Services	Laboratory Programs	Meeting the National Need for Artificial Intelligence Research, Testing, and Standards	44	47,700
NIST-31	Scientific and Technical Research and Services	Laboratory Programs	Advancing Quantum Information Science and Technology Readiness	41	13,910
	Total, Increases			85	239,887

Decreases

Page No In CJ	Appropriations	Budget Program	Title of Decrease	Positions	Budget Authority
NIST-108	Construction of Research Facilities	Construction and major renovations	Removal of One-time Congressional External Projects	(4)	($332,285)
NIST-49	Scientific and Technical Research and Services	Standards Coordination and Special Programs	Removal of One-time Congressional External Projects	0	(62,532)
NIST-51	Scientific and Technical Research and Services	Standards Coordination and Special Programs	Standards Coordination and Special Programs Reduction to Offset Inflationary Costs	0	(3,076)
NIST-73	Industrial Technology Services	Manufacturing Extension Partnership (MEP)	MEP Decrease to Fund Inflationary Costs	0	(911)
NIST-78	Industrial Technology Services	Manufacturing USA	Manufacturing USA Decrease to Fund Inflationary Costs	0	(265)
	Total, Decreases			(4)	(399,069)

Terminations

Appropriations	Budget Program	Title of Termination	Positions	Budget Authority
No program change requested.				
Total, Terminations				

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Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services [1/]
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations	Appro-priation
2024 Annualized CR	2,808	2,661	$954,500	$1,100,173	$953,000
Less: Unobligated balance from prior year	0	0		(145,673)	
Less: Transfer from DoJ	0	0	(1,500)	(1,500)	0
2025 Adjustments to Base					
Annualization of positions financed in FY 2024	0	0	0	0	0
Plus: Inflationary adjustments to base	0	0	25,998	25,998	25,998
2025 Base	2,808	2,661	978,998	978,998	978,998
Less: 2025 Program changes	85	64	(3,998)	(3,998)	(3,998)
Plus: Transfer from DoJ	0	0	1,500	1,500	0
2025 Estimate	2,893	2,725	976,500	976,500	975,000

Comparison by activity/subactivity with totals by activity		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease over 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Measurement Science, Services, and Programs											
Laboratory Programs	Pos./Approp	2,552	$803,333 [2/]	2,552	$763,674	2,552	$787,250	2,637	$848,860	85	$61,610
	FTE/Obl.	2,262	754,602 [2/]	2,413	878,254	2,413	787,250	2,477	848,860	64	61,610
Corporate Services	Pos./Approp	31	17,460	31	17,460	31	17,752	31	17,752	0	0
	FTE/Obl.	28	17,475	30	17,572	30	17,752	30	17,752	0	0
Standards Coordination and Special Programs	Pos./Approp	225	172,207	225	171,866	225	173,996	225	108,388	0	(65,608)
	FTE/Obl.	200	157,597	218	204,347	218	173,996	218	109,888	0	(64,108)
TOTALS	Pos./Approp	2,808	993,000 [2/]	2,808	953,000	2,808	978,998	2,893	975,000	85	(3,998)
	FTE/Obl.	2,490	929,674 [2/]	2,661	1,100,173	2,661	978,998	2,725	976,500	64	(2,498)

[1/] Doesn't include actual obligation of $68.8M in FY 2023 and estimate obligations of $152M in FY 2024 and $152M in FY 2025 funded by Mandatory CHIPS.

[2/] Including enacted FY 2023 $40M from the Disaster Relief Supplemental Appropriations Act, 2023.

	2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease over 2025 Base	
	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Adjustments for:										
Recoveries		(6,990)		0		0		0		0
Refunds		(58)		0		0		0		0
Unobligated balance, start of year		($73,805)		(145,673)		0		0		0
Unobligated balance, end of year		145,673		0		0		0		0
Unobligated balance, expired account		6		0		0		0		0
Budget Authority		994,500		$954,500		$978,998		$976,500		($2,498)
Financing from transfers:										
Transfers from DoJ for OLES (-)		(1,500)		(1,500)		0		(1,500)		(1,500)
Transfers to other accounts (+)		0		0		0		0		0
Appropriation		993,000 [2/]		953,000		978,998		975,000		(3,998)

[2/] Including enacted FY 2023 $40M from the Disaster Relief Supplemental Appropriations Act, 2023.

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM AND PERFORMANCE: REIMBURSABLE OBLIGATIONS
(Dollar amounts in thousands)

Comparison by activity/subactivity	2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
	FTE	Amount	FTE	Amount	FTE	Amount	FTE	Amount	FTE	Amount
Measurement Science, Services, and Programs										
Laboratory Programs	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
SUMMARY OF FINANCING
(Dollar amounts in thousands)

	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
Total Obligations	$929,674 [1/]	$1,100,173	$978,998	$976,500	($2,498)
Offsetting collections from:					
Federal funds	0	0	0	0	0
Non-Federal sources	0	0	0	0	0
Total offsetting collections	0	0	0	0	0
Adjustments for:					
Recoveries and refunds	(7,048)	0	0	0	0
Unobligated balance, start of year	(73,805)	(145,673)	0	0	0
Unobligated balance, end of year	145,673	0	0	0	0
Unobligated balance, expired	6	0	0	0	0
Budget Authority	994,500	954,500	978,998	976,500	(2,498)
Financing:					
Transfers from other accounts (-)	(1,500) [2/]	(1,500) [2/]	0	(1,500)	(1,500)
Transfer to other accounts (+)	0	0	0	0	0
Appropriation	993,000 [1/]	953,000 [1/]	978,998	975,000	(3,998)

[1/] Including enacted FY 2023 $40M from the Disaster Relief Supplemental Appropriations Act, 2023.

[2/] Transfers of $1.5M from DOJ for NIST Office of Law Enforcement Standards (OLES).

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
ADJUSTMENTS TO BASE
(Dollar amounts in thousands)

	Perm. Pos.	FTE	Amount	
Transfer	...	...	0	
Adjustments	...	...	0	
Financing	...	...	0	
Other Changes:				
FY 2024 pay raise	...	...	$4,953	
FY 2025 pay raise	...	...	7,275	
Change in compensable days	...	...	0	
Annualization of positions financed in FY 2024	0	0		
Awards	...	...	1,197	
Personnel benefits:				
Civil Service Retirement System (CSRS)	...	...	(123)	
Federal Employees' Retirement System (FERS)	...	...	(117)	
Thrift Savings Plan (TSP)	...	...	(279)	
Federal Insurance Contribution Act (FICA)	...	...	642	
Health insurance	...	...	755	
Employees' Compensation Fund	...	...	102	
Travel and transportation of persons:				
Mileage	...	...	6	
Per Diem	...	...	112	
Rental Payments to GSA	...	...	581	*
GSA FIT (Furniture and IT) Program	...	...	(7)	
Communications, utilities, and miscellaneous charges:				
Postage	...	...	0	
HCHB Electricity	...	...	0	
HCHB Water/Sewer	...	...	0	
Electricity rate	...	...	1,064	
Natural gas rate	...	...	1,628	
Other services:				
Working Capital Fund Departmental Management	...	...	6,062	**
Cybersecurity (Non-Add in WCF)			[(33)]	
Commerce Business Systems (CBS)	...	...	0	
Commerce Enterprise Infrastructure Services (EIS)	...	...	(2,978)	
NARA storage costs	...	...	0	
General pricing level adjustment	...	...	5,125	
Subtotal, Other Changes	0	0	25,998	
Total, Adjustments to base	0	0	25,998	

* an additional approximately $1.0M in rental payments to GSA is being assigned to the NIST-CHIPS program for a total cost of $1,581K for this ATB line item.

** an additional approximately $12.8M in Working Capital Fund Departmental Management costs are being assigned to the NIST-CHIPS program for a total cost of $18,883K for this ATB line item.

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Measurement Science, Services, and Programs
Subactivity: Laboratory Programs

Line Item		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease over 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Strategic and Emerging	Pos./Approp	28	$19,389	28	$13,615	28	$13,879	28	$13,879	0	0
Research Initiative Fund	FTE/Obl.	25	10,435	27	18,089	27	13,879	27	13,879	0	0
National Measurement and	Pos./Approp	2,190	701,619 [1/]	2,190	666,119	2,190	686,468	2,275	748,078	85	$61,610
Standards Laboratories	FTE/Obl.	1,939	659,427 [1/]	2,069	758,476	2,069	686,468	2,133	748,078	64	61,610
User Facilities	Pos./Approp	229	66,286	229	67,902	229	69,896	229	69,896	0	0
	FTE/Obl.	205	68,943	218	79,049	218	69,896	218	69,896	0	0
Postdoctoral Research	Pos./Approp	105	16,039	105	16,038	105	17,007	105	17,007	0	0
Associateship Program	FTE/Obl.	93	15,797	99	22,640	99	17,007	99	17,007	0	0
Total	Pos./Approp	2,552	803,333 [1/]	2,552	763,674	2,552	787,250	2,637	848,860	85	61,610
	FTE/Obl.	2,262	754,602 [1/]	2,413	878,254	2,413	787,250	2,477	848,860	64	61,610

[1/] Including enacted FY 2023 $40M from the Disaster Relief Supplemental Appropriations Act, 2023.

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
JUSTIFICATION OF PROGRAM AND PERFORMANCE
(Dollar amounts in thousands)

Activity: Measurement Science, Services, and Programs
Subactivity: Laboratory Programs

Goal Statement

The goal of the NIST laboratory programs is to deliver world-class measurement science, standards, and technology to our stakeholders in industry, academia, and government to drive technological innovation that strengthens the economic and industrial competitiveness of the United States and improves our quality of life.

Base Program

The NIST laboratory programs work at the frontiers of measurement science, ensuring the U.S. system of measurements is firmly grounded on sound scientific and technical principles. The NIST laboratories address increasingly complex measurement challenges, ranging from the very small (quantum devices) to the very large (vehicles and buildings), and from the physical (resilient infrastructure) to the virtual (cybersecurity). As new technologies develop and evolve, NIST's measurement research and services remain central to innovation, productivity, trade, national security, and public safety.

The NIST laboratory programs provide industry, academia, and other Federal agencies with:

- World-class research capabilities in measurement science, forming the foundation of our global system of weights and measures and enable innovation.
- Basic and applied measurements, calibrations, and standards impacting every aspect of our economy and lives from the accuracy of airplane altimeters to the reliability of clinical measurements, to the strength of the encryption technologies that protect our digital lives and businesses.
- Unbiased technical support for the development of industry-led, open, consensus-based documentary standards and specifications driving the deployment of advanced technology solutions and facilitate global commerce.
- Unique, cutting-edge user facilities helping over 3,000 scientists from academia and industry move the state of the art forward in advanced materials, nanotechnology, bioscience, and other emerging technology areas.

NIST's mission is essential for U.S. commerce and global competitiveness. The Nation's founders knew the importance of weights and measures and that standards and technology are fundamental to effective commerce and trade, representing a critically important role of the Federal Government. Article 1 Section 8 of the Constitution gives the government the power to "fix the Standard of Weight and Measures," and Congress established the National Bureau of Standards (renamed NIST in 1988) to fill this role. This makes NIST a National Metrology Institute, responsible for the dissemination of the fundamental units of measurement, the basis of international trade and commerce, and enabling scientific progress. NIST is the best in the world at performing its metrology mission. Other nations of the world are now seeking to gain an advantage over U.S. leadership in standards, technology, and trade by making substantial investments in the work and facilities of their own National Metrology Institutes, such as those in China and Germany.

A clear example of the fundamental and infrastructural nature of NIST's mission space is NIST's work in the dissemination of the time and frequency standards. The dissemination of the time standard, traceable to NIST's atomic clock in Boulder, CO, underpins a tremendous amount of activity in our modern commercial system. For example, NIST official time is used to time-stamp hundreds of billions of dollars in U.S. financial transactions each working day. NIST time is also disseminated to industry and the public through the Internet Time Service which receives about 40 billion automated requests per day to synchronize clocks in computers and network devices. Additionally, other technological breakthroughs that we now take for granted are dependent upon the accuracy and precision of NIST's atomic clocks. This includes cellular telephones, Global Positioning System (GPS) satellite receivers, and the electric power grid.

Furthermore, the investment in the measurement science mission of NIST has proven to have a significant economic influence with a series of economic impact studies showing the average investment in NIST research has a direct benefit to cost ratio of 47:1.[1] That is, for every tax dollar invested in NIST, $47 of value is created in the economy annually.There is no other private sector, or government entity with the capability, capacity, or mission to provide the types of services as those provided by NIST.

Examples of Accomplishments

Recent highlights of accomplishments from the laboratory programs include:

Cybersecurity and Privacy: In March 2023, the White House released its National Cybersecurity Strategy, a plan for renewed focus on the importance of securing cyberspace through public-private collaboration and coordination. NIST is playing a key role in implementing the strategy and NIST's existing work and expertise was used in creating the strategy and implementation plan. NIST is in the process of updating the Cybersecurity Framework to version 2.0 (CSF 2.0). In January 2023, NIST posted a CSF 2.0 Concept Paper outlining potential significant updates, receiving nearly 100 responses from across industry and government. NIST also hosted two workshops in February 2023 where more than 2,000 participants from 69 countries attended to provide input. This complete draft of the NIST CSF 2.0 was released for public comment in summer 2023, with the new framework ultimately expected in 2024. NIST is also in the process of updating NIST Special Publication 800-63, Digital Identity Guidelines. Last updated in 2017, the new guidance is intended to help government systems with risk-management for digital identity while also supporting privacy, equity, and accessibility. NIST has engaged with stakeholders in this update by releasing the draft for public comment in December 2022 and hosted a virtual workshop in January 2023. NIST also sent delegation to Brussels, Belgium to participate in meetings of TTC Working Group 1 Digital Identity Subgroup focused on the development and use of digital identity technology standards in the U.S. and the EU.

[1] Summary of NIST Laboratory Economic Impact Studies: https://www.nist.gov/director/summary-nist-laboratory-economic-impact-studies

At the National Cybersecurity Center of Excellence (NCCoE), NIST has developed practical cybersecurity guides in collaboration with industry in 5G, distributed energy resources, and held multiple public workshops on cybersecurity for genomic data. In March 2023, the NCCoE launched NIST's Small Business Cybersecurity Community of Interest, where small businesses can engage with NIST and access tools and resources to support cybersecurity.

Quantum Information Science: NIST continues to support the quantum ecosystem through engagement with organizations such as the Quantum Economic Development Consortium (QED-C) and the Quantum Systems through Entangled Science and Engineering (Q-SEnSE) Institute. In April of 2023, NIST researchers and their collaborators at the University of Maryland, College Park demonstrated an integrated architecture for deployable optical atomic clocks and quantum-enhanced sensing using integrated photonics and atom trapping on a chip. NIST researchers also released the results of a study on superconducting single-photon detectors that were used to improve constraints on dark matter by a factor of two, helping astrophysicists study the formation of the universe. In February of 2023, NIST and Colorado University Boulder partnered with SPIE, QED-C, the Colorado Photonics Industry Association, and several quantum companies to train the quantum workforce through a short course in single photon measurements.

Strengthening Cryptography: NIST continued to pursue identification of post-quantum cryptographic algorithms (also called quantum-resistant cryptographic algorithms) to develop cryptographic systems that are secure against both quantum and classical computers and can interoperate with existing communications protocols and networks. NIST has also tackled challenges in using cryptography to protect information created and transmitted by the Internet of Things (IoT) and other miniature technologies such as those used in medical devices and sensors. In February 2023, NIST announced that Ascon, a group of cryptographic algorithms, will be published as NIST's lightweight cryptographic standard. As part of its cryptographic standards review process, NIST also updated FIPS 186, the Digital Signature Standard, which was last updated in 2013.

Artificial Intelligence (AI): NIST contributes to the research, standards and global cooperation to develop and advance safe and responsible AI that will enable American innovation, enhance economic security, and improve our quality of life. In January 2023, NIST released Version 1.0 of the AI Risk Management Framework (RMF) and the AI RMF Playbook to help manage risks associated with AI to individuals, organizations, and society. Since its release, the AI RMF has been widely praised by major industry firms including Microsoft, Google, and Amazon Web Services, and is already being used by some firms. NIST has been working with the community to develop AI RMF crosswalks with international standards. To help users operationalize the NIST AI RMF, NIST launched its Trustworthy AI Resource Center (AIRC) in March 2023 at the White House Summit for Democracy. In May 2023, NIST announced the launch of Trustworthy AI in Law and Society (TRAILS) Institute to develop trustworthy AI, which is a partnership of the University of Maryland, The George Washington University, Morgan State University, and Cornell University funded by the partnership of NIST with the National Science Foundation (NSF). NIST also continues to engage domestically and internationally on efforts to develop responsible AI. On behalf of the Commerce Department, NIST assembled the National AI Advisory Committee (NAIAC), a group of experts tasked with advising the President and the National AI Initiative Office on topics related to AI. Within USG, NIST leads several interagency committees or efforts. A few examples are: NIST co-chairs NSTC MLAI SC (with OSTP, NSF, and DoE); NIST co-chairs NITRD AI IWG (along with NSF and DoE); NIST staff serves as the Federal AI Standards Coordinator; and NIST staff served as a NAIRR Task Force member. Internationally, NIST has also engaged actively with AI efforts by participating in the US-EU Trade and Technology Council (TTC), the Quad, Organization for Economic Co-operation and Development (OECD) AI Expert Groups, OECD Working Party of AI Governance (AIGO), and the Council of Europe Committee on AI. NIST was the main US author of the TTC joint AI roadmap on Evaluation and Measurement Tools for Trustworthy AI and Risk

Management and is leading the implementation of the roadmap through launching three expert groups to focus on AI terminology and taxonomy, standards and tools for trustworthy AI and risk management, and monitoring and measuring AI risks.

Bioscience: NIST's research focuses on materials, measurements, and data to improve critical metrology needs in the biological sciences. In January 2023, NIST released a yeast material for training first responders on biothreats. The material consists of living yeast cells that contain a genetic tag that can be detected using nucleic acid detection technologies meaning the cells are safe for people to use in detection training exercises as a surrogate for more harmful biothreats such as anthrax. Also, in January 2023 NISTCHO – a new cell line that produces the highly characterized monoclonal antibody molecule which is critical for standardization in pharmaceutical production. This material can be used for QA/QC of antibody production as well as benchmarking fermentation and other biomanufacturing processes. The cell line is now available for use in the research community as NIST Research Grade Test Material 10197. In March 2023, in accordance with the White House Bioeconomy Executive Order NIST released the Report for Bioeconomy and Biomanufacturing R&D to Further Societal Goals in Supply Chain Resilience which discusses how the bioeconomy can be leveraged to improve climate, food and agriculture, supply chains, and other major societal goals as well as what is needed to translate research into practice for a competitive U.S. bioeconomy.

Resilience: NIST's resilience research focuses on the impact of hazards on buildings and communities and on post-disaster studies to help improve standards, codes, and practices for buildings and infrastructure systems. NIST led the research to inform the first national building standard of its kind – the standard provides design requirements and guidance to keep small, isolated failures in a structure from propagating and bringing down the entire building or a major part of it called disproportionate collapse. In June 2023, the American Society of Civil Engineers (ASCE) published the ASCE/SEI 76-23 Standard for Mitigation of Disproportionate Collapse Potential in Buildings and Other Structures. NIST wildfire investigations have shown that sheds play a key role in facilitating the progression of flames throughout communities in the wildland-urban interface (WUI). In June 2023, a team of fire safety experts at NIST, the California Department of Forestry and Fire Protection (CAL FIRE) and other organizations have conducted a series of rigorous experiments to gauge the ability of sheds to ignite residential-type structures. NIST is also continuing the investigation into the partial collapse of the Champlain Towers South building in Surfside, FL. Recommendations from these investigations will help ensure that codes, standards, and practices are revised in order that building failures like these do not happen again in the future.

Advanced Communications: In May 2023, NIST co-hosted the WSRD Workshop: Making Data Available for National Spectrum Management to identify challenges associated with obtaining, disseminating, and using data about spectrum to support policy making, operations, and R&D with applications to spectrum sharing and optimization through improved analysis, modeling and prediction. The workshop discussed ideas for resolution of these challenges through the action of researchers, industry, agencies, regulators, or legislators with potential inputs to R&D agency prioritization and the National Spectrum Strategy. NIST entered a Memorandum of Understanding (MOU) with Korea Institute for Advanced Technology (KIAT) and the Korea Automotive Technology Institute (KATECH) for joint research projects to advance standards related to system architecture, 5/6G Technology and cybersecurity of automated vehicles. In June 2023 NIST and the First Responder Network Authority hosted the 5x5 Public Safety Innovation Summit**.** This event brings together public safety, academia, government, and industry leaders to discuss the current state of public safety communications technology and drive advancements in research, development, and deployment.

Manufacturing: NIST is working with industry, academia, and other government agencies to develop essential measurement capabilities and forge precompetitive collaborations that help U.S. manufacturers overcome shared technical obstacles. NIST has established the technical basis for and contributed to development of multiple manufacturing-related standards, including new high-impact standards in the areas of metals-based additive manufacturing, manufacturing robotics, and manufacturing data infrastructure and analytics. In November 2022, NIST published the Manufacturing Objects for Assembly Datasets (MOAD) with novel apparatus, procedure, and datasets to train AI-based robot perception systems. In March 2023, NIST announced the establishment of the Metal Additive Manufacturing Powder Consortium to bring together stakeholders to identify and address precompetitive measurement science and standards needs related to metal powders used in various additive manufacturing technologies. In September 2023, NIST published ontology models to support digital twins of continuous biomanufacturing processes and extended the developed standards to enable domain-specific implementation of digital twins in manufacturing. In December 2023, NIST awarded nearly $3 million in funding to 15 U.S. small businesses in 9 states under the Small Business Innovation Research (SBIR) program to advance technologies in semiconductors, drug development, and flexible electronics manufacturing among other critical needs.

Diversity, Equity, Inclusion, and Accessibility (DEIA): In the past year, NIST hired a new director of the Diversity, Equity, and Inclusivity Office and during their tenure, completed over half of the targets developed by the Office the previous year. NIST also established a Community of Practice and is developing an Executive Council for DEIA to create a welcoming work environment that effectively recruits and retains diverse talent with varied backgrounds, experiences, and expertise to bolster innovation and productivity. NIST is actively engaged with DEIA efforts at the Department of Commerce (DOC) level to remain current on the evolving scope of DEIA best practices across the Federal landscape. NIST is implementing the principles outlined in the federal-wide competency guide to develop a workplace with clearly defined principles and the skills and behaviors needed to support a work environment of dignity and respect. At the DOC level, NIST coauthored the 2024 DOC Equity Action Plan under Executive Order 14091 and participated in the DOC External Equity Workstream to ensure NIST research, services, and products meet the needs of the American public.

NIST Laboratories directed efforts to address the potential discriminatory effects of certain AI technology:

- The National AI Advisory Committee (NAIAC), to which NIST is secretariat, is a group of experts that advises the President and the White House National Artificial Intelligence Initiative Office. The Committee advises on matters related to the development of artificial intelligence, including law enforcement and legal standards, such as those ensuring that AI use is consistent with privacy rights, civil rights and civil liberties, and disability rights. The Committee has held 13 public meetings and has also published several reports, recommendations, and non-decision documents on topics including AI literacy, existential risk, and implementation of the US AI Safety Institute.

- The U.S. AI Safety Institute was announced in October 2023 by Vice President Harris at the AI Safety Summit in the UK. The Institute is led by NIST, and its mission is to build the science necessary for safe development and use of trustworthy AI. As part of the Institute, a Consortium of diverse stakeholders was launched in February 2024. The Consortium's inaugural cohort includes more than 200 member companies and organizations that are on the frontlines of creating and using the most advanced AI systems and hardware. Members represent the nation's largest companies and most innovative startups; academics; government and industry researchers; civil society organizations; and AI creators and users. The Consortium also includes state and local governments, as well as non-profits, and will work with organizations from like-minded nations that have a key role to play in developing interoperable and effective tools for safety around the world.

Many more interesting accomplishments and industry impacts can be found at: https://www.nist.gov/director/pao.

Statement of Operating Objectives

Priority Objectives for FY 2025

NIST Laboratory Research Priorities

Throughout its history, NIST has provided new industries with foundational measurement tools that enhance reproducibility, interoperability, and reliability to accelerate innovation, adoption, and impact. With input from academia and industry, NIST has identified five strategic focus areas that will best position NIST to drive innovation in support of America's economic security in the coming decades:

- *Quantum Science*: NIST's world-leading expertise in quantum science, conducted with academic and industry partners, is furthering the development of new quantum measurement technologies upon which U.S. companies are building new businesses and services and contributing to the training of a growing U.S. quantum workforce.
- *Artificial Intelligence*: NIST is developing measurements and data that address the performance and reliability of AI systems to accelerate their widespread adoption and enable the Nation to realize the potential economic, societal, and innovation benefits that AI systems offer to consumers. NIST has also provided the AI community with a framework for managing risks and maximizing benefits from AI systems, the AIRisk Management Framework (RMF) Version 1.0, which was the product of an open process involving stakeholder input via commentary and NIST-hosted workshops.
- *Engineering Biology*: NIST is enabling the design and manufacture of biological systems -- for products such as high-value pharmaceuticals and commodity chemicals -- by developing advanced measurement capabilities from the molecular to the cellular system scale. NIST will continue to play a significant role to support the U.S. bioeconomy through building next generation measurement science (biometrology) capabilities and engineering biology laboratories for accelerating responsible biotechnology innovations.
- *Internet of Things*: NIST is leveraging its expertise in advanced communications, manufacturing systems, cybersecurity, and more to develop testing tools, best practices, and standards that support the widespread deployment of safe and reliable internet of things technologies and applications.
- *Climate*: NIST laboratories generate the measurements and research to address climate change in impactful areas from climate measurements and modeling of greenhouse gas emissions to research and tools to build more resilient communities and alternative energy infrastructure.

NIST has prioritized the work of its laboratories with these emerging technology areas, in addition to focusing on continuing priorities around cybersecurity, advanced communications, and advanced manufacturing.

NIST's research supports the development of technical standards that are crucial to drive innovation and applications. Over 400 NIST staff participate in international standards activities as technical experts and in leadership roles. Standards underpin every aspect of our daily lives, from enabling communication technologies such as Bluetooth and Wi-Fi to ensuring the safety of devices such as pacemakers and step ladders. NIST efforts promote confidence in the performance of products and enable international trade. The standards leadership and expertise provided by NIST is an essential element of a broader U.S. effort to lead in the emerging technologies that will define the 21st century economy.

Explanation and Justification

Line Item		2023 Actual		2024 Annualized CR		2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
Laboratory Programs	Pos./BA	2,552	$803,333	2,552	$763,674	2,552	$787,250
	FTE/Obl	2,262	754,602	2,413	878,254	2,413	787,250

Laboratory Programs (FY 2025 Request by Program Area shown below. Total Funding: $787.3 million and 2,552 Positions)

The FY 2025 base budget request for NIST Laboratory Programs focus on the following mission functions and programmatic areas:

Exploratory Measurement Science ($81.8 million) – NIST's mission requires deep expertise in a broad range of disciplines. To best position NIST to support U.S. technological interests well into the future, it is essential that NIST maintains a portfolio of exploratory measurement science research programs. This portfolio includes investing in higher-risk and potentially transformative projects selected in a competitive internal process and the NIST National Research Council Postdoctoral Research Associateship Program that brings researchers of exceptional promise to NIST. NIST invests in higher-risk and potentially transformative measurement science research to stay on the cutting edge of science and technology trends. NIST's exploratory research accelerates innovation in emerging areas. For example, as part of the Innovations in Measurement Science program NIST just launched a project to capitalize on emerging 5G millimeter wave (mm-wave) technology to develop quantum metrology in the 10 GHz to 100 GHZ range. This program aims to remove the metrology roadblocks that inhibit the broader quantum community from developing quantum systems operating in this higher frequency range, which would then allow operation of "hot" qubits at temperatures up to 1 K. This temperature range is substantially less expensive and technologically challenging to work at then the much colder temperatures that researchers using superconducting qubits currently require.

Advanced Manufacturing and Material Measurements ($130.6 million) – NIST has partnered with the U.S. manufacturing sector for more than a century and has a proven track record of delivering the tools and technical expertise that existing manufacturers and aspiring start-ups need. NIST's Advanced Manufacturing and Material Measurements activities provide industry with precision measurement technologies, tests, protocols, trusted systems, and world-class scientific and engineering knowledge through targeted research across a broad portfolio, including advanced materials development, advanced sensing, additive manufacturing, and incorporating artificial intelligence into materials science data workflows. NIST's efforts support the Administration's Executive Order on Ensuring the Future Is Made in All of America by All of America's Workers and the Administration's Executive Order on America's Supply Chains by enabling the development of a strong U.S. manufacturing base that is essential to our economic and national security.

Fundamental Measurement, Quantum Science, and Measurement Dissemination ($218.1 million) – The NIST Laboratory Programs work at the frontiers of measurement science to ensure the U.S. system of measurements is firmly grounded on sound scientific and technical principles. NIST determines the definitive methods for nearly every kind of measurement employed in commerce and research, provides NIST-traceable calibrations, and disseminates standards and best practices throughout the Nation. The NIST laboratories address increasingly complex measurement challenges as new technologies develop and evolve. NIST's measurement research and services remain central to innovation, productivity, trade, national security, and public safety. Quantum science is a top strategic priority for NIST and the country. A recognized world

leader in the field of quantum science and technology, NIST plays a central role in the National Quantum Initiative and is developing critical measurement capabilities necessary for the U.S. to maintain and strengthen its competitive edge in the global race to capture anticipated benefits of emerging quantum technologies. NIST research, combined with its expertise in advanced materials, nanofabrication, photonics, and microelectronics, the fundamental science and workforce development at our network of joint institutes (JILA, the Joint Quantum Institute, and QuICS), and industry partnerships within the Quantum Economic Development Consortium (QED-C), make NIST a true hub for all aspects of quantum innovation. In FY 2025, NIST will continue to focus on broadening its research portfolio on quantum engineering activities to enhance translation of science and technology from NIST laboratories to the marketplace. This will include expanded quantum engineering and innovation partnerships with academia, government, and industry, as well as investment in fundamental science and infrastructure necessary to improve performance and reliability of quantum technologies for anticipated practical applications in sensing, networking, and computing, and measurement standards associated with these.

Advanced Communications, Networks, and Scientific Data Systems ($88.4 million) – NIST's Advanced Communications, Networks, and Scientific Data Systems activities enable U.S. industry to develop and deploy secure, reliable, high-speed wireless and wireline communications systems that are critical to U.S. economic competitiveness, safety, and security. NIST measurement science research, development of simulation tools and data sets, test bed construction, and support for the development of standards all serve to accelerate the deployment of next-generation communication technologies, such as fifth generation (5G) cellular systems, next-generation versions of the IEEE 802.11 (Wi-Fi) standard that include support for mm-Wave communications and antenna beamforming, integrated wireless sensing and communications systems, high-resolution channel sounding systems, and the National Public Safety Broadband Network. These technologies will enable autonomous vehicles, advanced sensing systems, internet of things (IoT) applications, future Machine Learning (ML) systems and Artificial Intelligence (AI) systems, and public safety communications with enhanced capabilities such as mission-critical voice and location-based services. NIST is committed to solving the measurement and deployment challenges of these fast-moving fields to help the U.S. achieve and maintain global leadership in these areas.

Cybersecurity and Privacy ($96.8 million) – NIST is the DOC lead agency on Cybersecurity issues. NIST's Cybersecurity and Privacy activities strengthen the security of our digital world through a portfolio that bridges foundational and applied cybersecurity research, and through the development of publicly available frameworks, standards, and technical guidance documents. For example, NIST's work in reducing the cybersecurity risk of global supply chains is critical as the U.S. recovers from the COVID-19 pandemic. NIST's sustained outreach supports the effective application of standards and best practices enabling the adoption of practical cybersecurity and privacy. Through internal research and collaboration with the private sector, academia, standards development organizations, other government agencies, and national and international stakeholders, NIST addresses the Nation's current and future measurement science needs and is responsive to Congressional mandates and Executive Orders.

Health and Biological Systems Measurements ($39.8 million) – NIST is paving the way for a vibrant U.S. bioeconomy by advancing research and development in engineering biology, biomanufacturing measurements and technologies, standards, and data for impacts in healthcare, climate change and environmental sustainability, food and agriculture, and supply chain resilience. As a non-regulatory agency, NIST provides a solid foundation of measurement assurance that enables innovations in health and bioscience and helps accelerate the development, manufacturing, and regulatory approval of innovative, high-quality biologic medicines: Medical researchers and manufacturers of diagnostics and treatments use NIST research, calibrations, test materials, and international standards development leadership to be able to efficiently develop new products, meet regulatory requirements, ensure efficacy and safety of treatments, and maintain the global competitiveness of U.S. companies. NIST's programs range from supporting underlying technologies and measurements for engineering/synthetic biology and biomanufacturing to regenerative medicine,

advanced therapies, and genomics. NIST efforts include utilizing new developments in biotechnology to harness the power of complex biological systems (primarily cells) predictably and safely for the manufacture of advanced therapeutics, sustainable fuels, chemical feedstocks, and advanced materials.

Physical Infrastructure and Resilience ($66.2 million) – NIST's Physical Infrastructure and Resilience activities support the safety, interoperability, and resilience of the Nation's infrastructure at the component, structure, and system levels including power, transportation, water, and telecommunications. NIST's research supports the development of building codes that make the built environment healthier for occupants, more resilient against hazards and natural disasters, and safer for both residents and first responders. In collaboration with policymakers, building officials, and planning groups, NIST produces guides to help communities integrate resilience into their economic development, zoning, mitigation, and other local planning activities that impact buildings, public utilities, and infrastructure systems. In collaboration with industry and academia, NIST performs research into novel materials, tools, instruments, and protocols to provide a technical foundation to standards and codes and to support innovation.

NIST User Facilities ($65.6 million) – NIST operates two unique and valuable user facilities that provide U.S. scientists with access to cutting-edge expertise and capabilities to perform innovative research beyond the reach of the user's own laboratory. The NIST Center for Neutron Research (NCNR) features world-class neutron instrumentation and expertise in the development and application of neutron measurement technologies. The Center for Nanoscale Science and Technology (CNST) provides users rapid access to state-of-the-art tools needed to fabricate and characterize nanoscale structures, devices, and materials.

The ongoing research and development work outlined above are performed by six NIST laboratory organizational units which house the staff and facilities necessary to conduct and deliver the ground-breaking measurement science, standards, and technology work in the focus areas. The six laboratories are in Gaithersburg, Maryland, and Boulder, Colorado. Additional information on recent activities specific to each of these laboratories can be found online through the websites provided below:

- Communications Technology Laboratory (CTL): The Communications Technology Laboratory promotes the development and deployment of advanced communications technologies through the dissemination of high-quality measurements, data, and research supporting U.S. innovation, industrial competitiveness, and public safety. CTL work establishes the metrological foundations for higher speeds, better connections, and more ubiquitous access amid rising wireless demand. With expertise honed over decades of theoretical and experimental work in antennas and wireless propagation, materials science, and electronics measurement and testing, CTL is an independent, unbiased arbiter of trusted measurements and standards to government and industry. CTL focuses efforts on establishing vital technological foundations for the ongoing wireless revolution across the following focus areas:
    - Public Safety Communications Research – Driving innovation and conducting research that enables the development of performance-based standards for first responder communications;
    - Testing for Wireless Innovations – Facilitating and coordinating sensing, waveform analysis, and related engineering capabilities while creating a trusted capability for evaluating innovations in wireless resource usage;
    - Next-Generation Communications for 5G and Beyond – Advancing measurement science for next-generation wireless systems including characterizing millimeter wave (mmWave) radio channels and performance assessment;

- Fundamental Metrology for Communications – Developing theory, measurements, and standards for the next generation of radio frequency systems and other technologies that will underpin the future development of wireless communications; and
- Leadership and technical expertise in advanced communications related standards development – Over 30 NIST experts lead and participate in global standards and specification development organizations such as 3GPP, IEEE, IETF, ITU-T, O-RAN Alliance, ATIS, ISO-IEC/JTC1, FIDO Alliance, and WinnForum.

https://www.nist.gov/ctl

- Engineering Laboratory (EL): The Engineering Laboratory researches engineering and manufacturing processes, systems, and equipment; engineering of sustainable and energy-efficient buildings; and engineering of disaster-resilient buildings, communities, and infrastructure. EL's studies of major disasters help guide research and develop recommendations for design and construction practices to reduce hazards. NIST validates research in realistic end-use scenarios using EL's unique test facilities, including the National Fire Research Laboratory that combines large-scale, realistic, fire conditions, and structural loads to study the fire behavior of buildings and construction materials; the Robotics Test Facility for evaluating robotic sensing, manipulation, endurance, and search and rescue performance; and the Net-Zero Energy Residential Test Facility, a testbed for combining and assessing new home-scale energy technologies in a realistic environment. EL research and facilities focus on the following strategic goal areas:
  - Disaster-Resilient Buildings, Infrastructure, and Communities – Enabling engineering of the built environment to enhance the resilience of U.S. buildings, communities, and infrastructure to earthquakes, wind, fire, and other hazards;
  - Energy-Efficient, High-Performance Buildings – Accelerating the implementation of cost-effective, energy-efficient, grid-integrated buildings that have healthy and comfortable indoor air, reduced effects on climate change, and increased resilience through advances in measurement science and standards;
  - Advanced Manufacturing – Developing and deploying measurement science that forms the scientific and technical basis for standards and enables U.S. industry to assess and reduce the risk of investment in advanced manufacturing technologies.

https://www.nist.gov/el

- Information Technology Laboratory (ITL): The Information Technology Laboratory develops and deploys standards, tests, and metrics to make the Nation's information systems more secure, usable, interoperable, and reliable. ITL's strategy is to maximize the benefits of information technology (IT) to society through a balanced IT measurement science and standards portfolio of three major activities: fundamental research in mathematics, statistics, and IT; applied IT research and development; and standards development and technology transfer. ITL identifies emerging and high-priority technologies, conducts path-breaking research to advance our understanding of their limits and capabilities and potential applications, and develops security and privacy solutions that have a high impact on the U.S. critical infrastructures. As a world-class measurement and testing laboratory spanning diverse areas of computer science, mathematics, statistics, and systems engineering, ITL supports areas of national importance, including:

- Cybersecurity and Privacy – Bridging foundational and applied cybersecurity and privacy research and development and cybersecurity operations through the development of standards and technical guidance;
- Artificial Intelligence – Leading Federal efforts in AI-related standards development and driving new developments in understanding foundational aspects of trustworthy AI;
- Internet of Things – Cultivating trust in the IoT and foster an environment that enables innovation on a global scale through standards, guidance, and related tools;
- Reliable Computing; and
- Future Computing Technologies and Applications.

https://www.nist.gov/itl

- Material Measurement Laboratory (MML): The Material Measurement Laboratory is the national reference laboratory for measurements in the chemical, biological, and material sciences. MML conducts research on the composition, structure, and properties of industrial, biological, and environmental materials and processes. MML develops tools such as reference measurement procedures, certified reference materials, and critically evaluated data and best-practice guides used by U.S. industry to assure measurement quality and improve process efficiency. This work improves U.S. competitiveness in an increasingly challenging global environment. MML enables measurements in areas of national importance, including:
  - Advanced Materials – Providing a gateway to new discoveries that involve nanomaterials, advanced electronics, structural steels, complex fluids, and more through the development of testbeds, measurements, models, and data;
  - Energy and Climate – Research and standards to advance next-generation climate measurements, and carbon capture approaches to mitigate climate change;
  - Health Care – Enhancing technology realization in clinical diagnostics, regenerative medicine, measurement services to ensure food nutrition and safety, environmental exposure metrology, and driving advances to enable applications of engineering biology and biotechnology;
  - Infrastructure – Developing methods to test and predict the health of physical infrastructure from bridges and buildings and the materials used to build them, as well as fuel pipelines and water infrastructure;
  - Manufacturing – Accelerating development of lightweight alloys for fuel-efficient automobiles biomanufacturing, and chemical manufacturing; as well as new measurements and standards for product sustainability and recycling to support the circular economy; and

- Safety, Security, and Forensics – Providing tools to help forensic crime laboratories validate their analytical methods and ensure accuracy in their results for DNA and biological evidence, fingerprint and pattern evidence, illicit drugs, digital evidence, ballistics, and trace evidence, developing metrologies for threat detection and protective materials.

https://www.nist.gov/mml

NIST Center for Neutron Research (NCNR): The NIST Center for Neutron Research is one of the Nation's premier neutron research facilities. The NCNR typically provides 225 days of reactor operation annually, serves over 2,500 researchers from 165 organizations and labs, and accounts for about 40% of all U.S. neutron research.

The NCNR is operated as a national user facility using a peer-reviewed, merit-based proposal approach. To address science and engineering problems of major interest, the NCNR continually invests in developing state-of-the-art neutron measurement capabilities, including:

- Cold Neutrons – NCNR optimizes cold neutrons for studying the structure of materials including polymers, pharmaceuticals, and magnetic materials, a capability constantly evolved through upgrades in enhanced productivity for a variety of techniques;
- Neutron Scattering – Users of the NCNR can probe the structure of materials at the nanometer scale through neutron scattering techniques.
- Neutron Imaging – NCNR is increasing its outstanding neutron imaging capabilities – which are uniquely able to image light elements, like hydrogen and lithium, and can help researchers optimizing fuel cell and battery designs - a new cold neutron microscope under development; and
- Powerful Partnerships – NCNR develops instrumentation in partnership with other agencies and stakeholders, including the Center for High Resolution Neutron Scattering, co-funded with National Science Foundation, and the private-public nSoft Consortium (established by NIST) focused on soft-matter research.

https://www.nist.gov/ncnr

- Physical Measurement Laboratory (PML): The Physical Measurement Laboratory is a world leader in measurement science, developing tools and techniques to meet the demands of American industry and science, providing calibrations, and disseminating standards and best practices. To achieve its mission, PML draws on its core capabilities to advance, realize, and disseminate the complete range of physical measurements, covering every unit of the International System of Units (SI), and thus, affecting nearly every aspect of modern life.

  To maintain state-of-the-art capabilities in realizing, disseminating, and measuring these quantities, PML invests in fundamental scientific research to push the boundaries and prepare for next-generation measurement needs. This measurement expertise also helps America address key technical challenges in:

  - Manufacturing – Helping industry improve efficiency by providing measurement solutions, researching new embedded standards, and facilitating the commercialization of NIST-pioneered technologies through the *NIST on a Chip Program*;

- Energy – Enabling effective transition to solid state lighting and initiating research to support advanced electric grid, hydrogen fuel cell and rechargeable battery technologies;
- Advanced Microelectronics – NIST is a crucial partner to the U.S. microelectronics industry, working with them to understand and address technical challenges for future electronics such as 2D materials, advanced packaging, atomic-scale defects, and the application of standards;
- HealthCare – Providing traceability for medical diagnostics, nuclear medicine treatments, and expanding capabilities into new modalities, like hyperspectral imaging;
- Climate - Accurate, comparable physical measurements are critical for monitoring, predicting, mitigating, and adapting to climate change;
- Quantum science – Leading research in novel quantum systems, related support technologies, and practical implementations, enabling quantum-enhanced measurements and standards.

https://www.nist.gov/pml

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research Services
PROGRAM CHANGES FOR 2025
(Dollar amounts in thousands)

		2025 Base		2025 Estimate		Increase from 2025 Submission	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
Advancing Artificial Intelligence Research, Standards, and Testing to Meet National Needs	Pos/BA	28	$35,000	72	$82,700	44	$47,700
	FTE/Obl.	28	35,000	61	82,700	33	47,700

Advancing Artificial Intelligence Research, Standards, and Testing to Meet National Needs ($47,700,000, 33 FTE/44 Positions) –

NIST requests an increase of $47.7 million in alignment with and to expand upon the sections of Executive Order 14110 *Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence* assigned to NIST. Specifically, funds requested would further NIST's ability to conduct artificial intelligence (AI) research; develop and conduct testing, evaluation, verification, and validation (TEVV) methods; develop technical guidance; facilitate development of standards; and implement best practices and frameworks. With these efforts, NIST will be able to address AI challenges related to having adequate scientific underpinning and practical tools for assurance and governance of AI, along with the technical standards and test methods necessary for evaluating transformative AI systems for characteristics like safety, security, and bias. NIST will begin to address this gap, leading U.S. industry, consumers, and partner nations' efforts to advance the science, practice, and policy of AI safety and trust, ultimately to strike the right balance between the innovation needed to achieve "AI for Good" with appropriate risk mitigation. Through the United States Artificial Intelligence Safety Institute and its consortium, NIST will drive collaborative innovation in evaluating capabilities, limits, risks, and impacts of AI systems to improve their safety. NIST will also invest in a program that addresses the necessary AI safety and trust R&D, testing, and standards and lay the groundwork for a robust evaluation infrastructure where necessary work can evolve as developments in AI continue.

1. ***United States Artificial Intelligence Safety Institute (USAISI) –*** NIST's USAISI is a joint collaborative research and development entity that will build the science necessary for safe development and responsible use of AI. In partnership with industry, academia, and civil society, the USAISI will create guidelines, tools, benchmarks, and usable practices for evaluating and mitigating dangerous capabilities. It also will develop metrics and will conduct evaluations to measure and manage AI risks including safety and security. The USAISI will promote collaboration through competitions and joint R&D opportunities, including to spur innovation in red-teaming and watermarking for synthetic content authentication, crucial needs to protect the integrity of information.

2. ***Advancing AI Research, Standards, Implementation, and Testing*** **–** NIST will enhance its ability to perform strategic research to develop more effective evaluations of AI systems' safety and trustworthiness, initiate establishment of the testing infrastructure necessary for current and advanced AI models, develop technical guidance for transparency in AI systems, and support organizations in implementing the AI Risk Management Framework (RMF).

The request increases NIST's investment in its Advanced Communications, Networks, and Data Systems portfolio by $47.7 million.

Performance Measures:

	2025	2026	2027	2028	2029
Performance Measure 1: Number of benchmarks evaluated using newly developed AI testbeds					
With increase	3	5	7	10	12
Without increase	0	0	0	0	0

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM CHANGE PERSONNEL DETAIL

Activity: Measurement Science, Services, and Programs
Subactivity: Laboratory Programs
Program Change: Advancing Artificial Intelligence Research, Standards, and Testing to Meet National Needs

Full-time permanent					
Title		Grade	Number	Annual Salary	Total Salaries
Computer Scientist		ZP V	5	$163,796	$818,982
Computer Scientist		ZP IV	5	139,251	696,256
Computer Scientist		ZP III	4	99,097	396,389
Program Manager		ZP IV	4	139,251	557,005
IT Specialist		ZP V	4	163,796	655,186
IT Specialist		ZP IV	3	139,251	417,753
IT Specialist		ZP III	5	99,097	495,487
Social Scientist		ZP V	3	163,796	491,389
Social Scientist		ZP IV	3	139,251	417,753
Social Scientist		ZP III	4	99,097	396,389
Administrative/technical support		ZA II	4	75,251	301,004
Total			44		5,643,594
Less lapse	25.00%		(11)		(1,410,899)
Total full-time permanent (FTE)			33		4,232,696
2025 pay Adjustment (2.0%)					84,654
					4,317,350
Personnel Data Summary					
Full-time Equivalent Employment (FTE)					
Full-time permanent			33		
Part-time permanent			0		
Full-time temporary			0		

Part-time temporary			0		
Total FTE			33		
Authorized Positions					
Full-time permanent			44		
Part-time permanent			0		
Full-time temporary			0		
Part-time temporary			0		
Total Positions			44		

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Direct Obligations amounts in thousands)

Activity: Measurement Science, Services, and Programs
Subactivity: Laboratory Programs

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11.1	Full-time permanent compensation	$282,138	$308,041	$309,838	$314,155	$4,317
11.3	Other than full-time permanent	20,999	22,101	22,633	22,633	0
11.5	Other personnel compensation	8,347	9,299	10,676	10,676	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	Total personnel compensation	311,484	339,441	343,147	347,464	4,317
12.1	Civilian personnel benefits	113,223	122,960	125,248	126,624	1,376
13	Benefits for former personnel	56	56	56	56	0
21	Travel and transportation of persons	8,717	8,826	8,824	9,035	211
22	Transportation of things	460	502	471	530	59
23	Rent, communications, and utilities	0	0	0	0	0
23.1	Rental payments to GSA	159	159	1,680	1,680	0
23.2	Rental payments to others	1,978	1,978	2,022	2,022	0
23.3	Communications, utilities, and misc. charges	23,181	27,189	25,713	30,806	5,093
24	Printing and reproduction	521	574	533	601	68
25	Other contractual services	0	0	0	0	0
25.1	Advisory and assistance services	1,502	1,310	1,368	1,368	0
25.2	Other services from non-Federal sources	37,890	124,486	17,085	20,846	3,761
25.3	Other goods and services from Federal sources	58,800	64,626	61,174	62,256	1,082
25.4	Operation and maintenance of facilities	0	0	0	0	0
25.5	Research and development contracts	49,524	52,524	50,669	64,119	13,450
25.6	Medical care	0	0	0	0	0
25.7	Operation and maintenance of equipment	17,683	18,576	18,105	18,674	569
25.8	Subsistence and support of persons	0	0	0	0	0
26	Supplies and materials	32,754	33,105	33,524	34,462	938
31	Equipment	37,279	37,551	38,240	41,016	2,776
32	Lands and structures	231	231	231	231	0
33	Investments and loans	0	0	0	0	0
41	Grants, subsidies and contributions	59,158	44,158	59,158	73,158	14,000
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	2	2	2	2	0
44	Refunds	0	0	0	0	0
99.9	Total obligations	754,602	878,254	787,250	834,950	47,700

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research Services
PROGRAM CHANGES FOR 2025
(Dollar amounts in thousands)

		2025 Base		2025 Estimate		Increase from 2025 Submission	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
Advancing Quantum Information Science and Technology Readiness	Pos/BA	64	$54,000	105	$67,910	41	$13,910
	FTE/Obl.	64	54,000	95	67,910	31	13,910

Advancing Quantum Information Science and Technology Readiness ($13,910,000, 31 FTEs/41 Positions) – NIST requests an increase of $13.910 million to further NIST's advancement of quantum information science and technology (QIST) by accelerating and expanding R&D efforts that underpin continued innovation and competitiveness for the rapidly growing U.S. quantum industry – including associated domestic supply chains – while meeting novel security threats posed by quantum technologies. To accelerate the development of the nascent U.S. quantum industry, NIST will develop new quantum standards, add new calibration services for industry, create new research partnerships, expand quantum workforce development, ensure the timely deployment of mitigation measures against the security threat of full-scale quantum computing, and advance metrology for realizing and improving the International System of Units (SI). NIST efforts will improve the performance, resilience, and deployment of new quantum technologies, including optical atomic clocks for Position, Navigation, and Timing (PNT) critical to the Department of Defense and national security. The U.S. Quantum Economic Development Consortium (QED-C), established by NIST in 2018, will be utilized to accelerate technology transfer to U.S. industry. Specifically, the request will increase investments in the following key areas:

Quantum Technology Research and Metrology – NIST will advance research into critical quantum technologies, including metrology for large-scale quantum systems, high-performance quantum systems, and quantum information science while expanding its program in post quantum cryptography. NIST will create a capability to support industry in extending present-day small-scale demonstrations to the large-scale quantum systems needed for high-impact applications and develop a research program to identify and address complex materials properties that currently limit the performance of quantum devices. NIST will expand quantum information science metrology to measurement problems related to building and connecting quantum systems, including those consisting of multiple platforms and expand its program for securing public-key encryption against expected future attacks from a quantum computer that will break current cryptosystems. NIST will also expand standards activities including, but not limited to, enhanced staff participation in standards development organizations and increased engagement in quantum standards development with universities and industry.

The request increases NIST's investment in its Fundamental Measurement, Quantum Science, and Measurement Dissemination portfolio by $13.910 million.

Performance Measures:

	2025	2026	2027	2028	2029
Additional peer Reviewed Papers Advancing Quantum Engineering and Quantum Technologies					
With increase	3	3	5	5	10
Without increase	0	0	0	0	0
Additional post-docs and students trained					
With increase	0	3	4	4	8
Without increase	0	0	0	0	0

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM CHANGE PERSONNEL DETAIL

Activity: Measurement Science, Services, and Programs
Subactivity: Laboratory Programs
Program Change: Advancing Quantum Information Science and Technology Readiness

Full-time permanent					
Title		Grade	Number	Annual Salary	Total Salaries
Mathematician		ZP V	2	$163,796	$327,593
Physicist		ZP V	2	163,796	327,593
Mathematician		ZP IV	2	139,251	278,502
Physicist		ZP IV	9	139,251	1,253,260
Engineer		ZP IV	4	139,251	557,005
Electronics Engineer		ZP IV	3	139,251	417,753
Postdocs		ZP III	2	99,097	198,195
Physicist		ZP III	4	99,097	396,389
Engineer		ZP III	2	99,097	198,195
Postdocs		ZP III	3	99,097	297,292
Postdocs		ZP III	2	99,097	198,195
Administrative Support		ZA III	2	99,097	198,195
Administrative/technical support		ZA II	4	75,251	301,004
Total			41		4,949,171
Less lapse	25.00%		(10)		(1,237,293)
Total full-time permanent (FTE)			31		3,711,878
2025 pay Adjustment (2.0%)					74,238
					3,786,116
Personnel Data Summary					
Full-time Equivalent Employment (FTE)					
Full-time permanent			31		
Part-time permanent			0		
Full-time temporary			0		

Part-time temporary			0		
Total FTE			31		
Authorized Positions					
Full-time permanent			41		
Part-time permanent			0		
Full-time temporary			0		
Part-time temporary			0		
Total Positions			41		

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM CHANGE DETAIL BY OBJECT CLASS

(Direct Obligations amounts in thousands)

Activity: Measurement Science, Services, and Programs
Subactivity: Laboratory Programs

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11.1	Full-time permanent compensation	$282,138	$308,041	$309,838	$313,624	$3,786
11.3	Other than full-time permanent	20,999	22,101	22,633	22,633	0
11.5	Other personnel compensation	8,347	9,299	10,676	10,676	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	Total personnel compensation	311,484	339,441	343,147	346,933	3,786
12.1	Civilian personnel benefits	113,223	122,960	125,248	126,455	1,207
13	Benefits for former personnel	56	56	56	56	0
21	Travel and transportation of persons	8,717	8,826	8,824	8,916	92
22	Transportation of things	460	502	471	523	52
23	Rent, communications, and utilities	0	0	0	0	0
23.1	Rental payments to GSA	159	159	1,680	1,680	0
23.2	Rental payments to others	1,978	1,978	2,022	2,022	0
23.3	Communications, utilities, and misc. charges	23,181	27,189	25,713	27,135	1,422
24	Printing and reproduction	521	574	533	639	106
25	Other contractual services	0	0	0	0	0
25.1	Advisory and assistance services	1,502	1,310	1,368	1,368	0
25.2	Other services from non-Federal sources	37,890	124,486	17,085	18,568	1,483
25.3	Other goods and services from Federal sources	58,800	64,626	61,174	61,534	360
25.4	Operation and maintenance of facilities	0	0	0	0	0
25.5	Research and development contracts	49,524	52,524	50,669	51,669	1,000
25.6	Medical care	0	0	0	0	0
25.7	Operation and maintenance of equipment	17,683	18,576	18,105	18,315	210
25.8	Subsistence and support of persons	0	0	0	0	0
26	Supplies and materials	32,754	33,105	33,524	34,243	719
31	Equipment	37,279	37,551	38,240	39,713	1,473
32	Lands and structures	231	231	231	231	0
33	Investments and loans	0	0	0	0	0
41	Grants, subsidies and contributions	59,158	44,158	59,158	61,158	2,000
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	2	2	2	2	0
44	Refunds	0	0	0	0	0
99.9	Total obligations	754,602	878,254	787,250	801,160	13,910

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Measurement Science, Services, and Programs
Subactivity: Corporate Services

Line Item		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease over 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Corporate Services	Pos./Approp	31	$17,460	31	$17,460	31	$17,752	31	$17,752	0	0
	FTE/Obl.	28	17,475	30	17,572	30	17,752	30	17,752	0	0
Total	Pos./Approp	31	17,460	31	17,460	31	17,752	31	17,752	0	0
	FTE/Obl.	28	17,475	30	17,572	30	17,752	30	17,752	0	0

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
JUSTIFICATION OF PROGRAM AND PERFORMANCE
(Dollar amounts in thousands)

Activity: Measurement Science, Services, and Programs
Subactivity: Corporate Services

Goal Statement

The goal of the Corporate Services program is to support NIST's mission to deliver world-class measurement science, standards, and technology to our stakeholders in industry, academia, and government to drive technological innovation that strengthens the economic and industrial competitiveness of the United States and improves our quality of life.

Base Program

This program includes the NIST central information technology (IT) support for NIST's mission programs and operations providing secure, centrally managed IT infrastructure resources leading to improved measurement methods, standards advancements, reference data, and research results benefiting numerous sectors of the U.S. economy. This program also provides the resources to operate and maintain administrative and financial management systems for NIST that satisfy the requirements established by the Department of Commerce (DOC), Office of Management and Budget, Government Accountability Office, Department of Treasury, and Congress.

Statement of Operating Objectives

In FY 2025, the Corporate Services will focus on the following items:

- Migrate to zero-trust architecture through automation of on connection policy decision points;
- Upgrade network equipment and infrastructure to enable NIST's leading edge research, while ensuring security and availability of NIST's data;
- Ensure IT infrastructure equipment is within a supported lifecycle, addressing challenges of end-of-life equipment; and
- Maintain and deliver reliable financial, acquisition, and administrative systems to assist NIST users in processing mission-related transactions, while striving to streamline business processes and improve transparency.

Explanation and Justification

Line Item		2023 Actual		2024 Annualized CR		2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
Corporate Services	Pos./BA	31	$17,460	31	$17,460	31	$17,752
	FTE/Obl	28	17,475	30	17,572	30	17,752

Corporate Services (Total Funding: $17.8 million and 31 Positions)

Computer Support - This effort ensures that NIST's IT infrastructure provides the fundamental backbone for requirements associated with NIST's scientific and technical leadership. NIST maintains an IT Infrastructure Roadmap that defines a phased, prioritized approach for upgrading the network/computing environments, and maintaining performance consistent with NIST mission requirements. This roadmap addresses the following critical issues:

- Building a research network that enables the transfer the volumes of data consistent with speed and accuracy necessary to support NIST's mission to advance American corporate leadership;
- Ensuring reliable network availability and capability to support the hybrid workforce's use of advanced web collaboration tools and VoIP (Voice over IP) technologies; and
- Upgrading network and network security infrastructure so that NIST services can be migrated to cloud infrastructure.

Business Systems - The DOC is undertaking a major multi-year consolidation and modernization initiative of multiple business systems, functions, and processes and has entered a long-term contract to implement a flexible system to support the management of financial, procurement, travel, grants, property, and other administrative functions called Business Applications Solution (BAS). NIST's business systems are an integral part of DOC's vision for consolidation and modernization. NIST has representatives participating in all facets of BAS's implementation (property, acquisitions, and core financial system). NIST supports DOC's effort to pursue a modernized Grants Management solution and continues to provide input to the DOC/Office of the Chief Information Officer's Grants Enterprise Management System effort. These efforts are undertaken while supporting NIST's current Commerce Business Systems.

The base funding requested of $17.8 million for Corporate Services supports the following ongoing mission functions and programmatic areas that are also described in more detail in the Laboratory Programs section of this budget request:

- Exploratory Measurement Science ($1.9 million)
- Advanced Manufacturing and Material Measurements ($3.1 million)
- Fundamental Measurement, Quantum Science, and Measurement Dissemination ($5.8 million)
- Advanced Communications, Networks, and Scientific Data Systems ($1.4 million)

- Cybersecurity and Privacy ($1.9 million)
- Health and Biological Systems Measurements ($0.8 million)
- Physical Infrastructure and Resilience ($1.6 million)
- User Facilities ($1.3 million)

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Measurement Science, Services, and Programs
Subactivity: Standards Coordination and Special Programs *

Line Item		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease over 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Standards Coordination	Pos./Approp	225	$109,675	225	$109,334	225	$111,464	225	$108,388	0	($3,076)
and Special Programs	FTE/Obl.	200	94,316	218	141,364	218	111,464	218	109,888	0	(1,576)
External projects	Pos./Approp	0	62,532	0	62,532	0	62,532	0	0	0	(62,532)
	FTE/Obl.	0	63,281	0	62,983	0	62,532	0	0	0	(62,532)
Total	Pos./Approp	225	172,207	225	171,866	225	173,996	225	108,388	0	(65,608)
	FTE/Obl.	200	157,597	218	204,347	218	173,996	218	109,888	0	(64,108)

* Includes Baldrige Performance Excellence Program (BPEP) funded at $2.7M in FY 2023 and FY 2024 and at $2.8M in FY 2025.

Department of Commerce
National Institute of Standards and Technology
Scientific Technical Research Services
JUSTIFICATION OF PROGRAM AND PERFORMANCE
(Dollar amounts in thousands)

Activity: Measurement Science, Services, and Programs
Subactivity: Standards Coordination and Special Programs

Goal Statement

The primary goal of the Standards Coordination and Special Programs is to provide for NIST functions in both the management of cross-cutting laboratory research programs, and NIST's engagement in standards and conformity assessment policy, and documentary standards development.

Base Program

Standards Coordination and Special Programs house cross-cutting NIST activities managed by the Associate Director for Laboratory Programs (ADLP) that deal with select R&D programs, documentary standards coordination, and conformity assessment, and policy development.

1. The Special Programs Office (SPO) plans and manages high-profile programs that span the mission and expertise of multiple NIST laboratories to address critical national needs. To meet these needs, SPO works with and forges partnerships among government, private industry, academia, and professional organizations to provide world-class leadership in advanced measurement science, science-based standards, and data-driven technology innovations. SPO actively fosters communication and collaboration between NIST and external stakeholder communities, as well as agile collaboration across organizational boundaries at NIST. SPO's portfolio of programs includes the Greenhouse Gas (GHG) Measurements Program, the Forensic Science Program, the Open Data Program, and other programs designated by the ADLP.

    - The NIST GHG Measurements Program develops advanced tools and standards to accurately map and measure GHG emissions, so industries and governments have the information they need to manage emissions reduction actions effectively. The GHG program operates a series of testbeds to advance measuring and monitoring of GHG emissions, and conducts research to increase accuracy and confidence in emissions flux quantification for both sources and sinks in multiple research areas, including: 1) stationary GHG emission sources, 2) measurement tools combining process-oriented emissions models with advanced atmospheric observations and analyses to better characterize GHG emission and uptake fluxes in metropolitan and urban areas, 3) measurements characterizing urban vegetative emissions and uptake, and 4) advancing accurate remote sensing of GHG concentrations in Earth systems.

    - The NIST Forensic Science Program is working to strengthen forensic practice through research and improved standards, conducting research in several forensic disciplines, including digital evidence, forensic genetics, biometrics, firearms and toolmarks, drugs and toxins, statistics, trace analysis, forensic algorithms and data, and quality assurance (which includes interlaboratory studies and proficiency testing). NIST provides physical reference standards and data that help forensic laboratories validate their analytical methods and ensure accurate test results. The program also supports the Center for Statistics and Applications in Forensic Evidence (CSAFE), one of three *NIST Centers of Excellence*, which is working to develop new statistical methods for use in pattern and digital evidence examination.

- The NIST Open Data Program facilitates the development and integration of advanced data science and engineering methods across the data lifecycle in areas including data management, data sharing, data interoperability, and data analytics. The Open Data Program coordinates development of infrastructure, workflows, policies, and procedures for providing public access to the result of NIST-funded research that takes the form of publications, data, and code, as well as other mission, administrative, and operational data.

2. The Standards Coordination Office (SCO) advises NIST leadership on policy and strategy as they relate to NIST's statutory role and responsibilities in standardization and serves as a normative standards and conformity assessment related multi-functional resource for NIST and U.S. government staff. The primary work areas of the SCO are highlighted below.

   - Standards Coordination: Standards effectively expedite trade and stimulate economic growth when they are developed, maintained, and applied in accordance with national policy, processes, and procedures. NIST provides guidance, training, information, and assistance so that companies, government agencies, standards bodies, and others can successfully work together on essential standardization and conformity assessment activities.

   - Standards Policy: The U.S. Government's role in the development and use of standards and conformity assessment is guided by the National Technology Transfer and Advancement Act of 1995 (P.L. 104-113), OMB Circular A-119, and other Federal laws, regulations, and international agreements.

   - Standards and Trade and Regulation: NIST provides a range of resources and activities to help users navigate the complex U.S. and international standards landscape. NIST coordinates with the World Trade Organization, Technical Barriers to Trade Related Inquiry Point and Notification Authority, and Standards Information Center -- providing unique standards, conformity assessment and technical regulations related information to NIST staff, U.S. government employees, U.S. exporters, and foreign trading partners.

   - Conformity Assessment and Laboratory Accreditation: Standards expedite trade across borders only when agreed-upon standards are followed consistently. NIST fosters compliance by evaluating conformity assessment accreditation bodies and ensuring adherence to standards specified in international agreements. NIST operates the National Voluntary Laboratory Accreditation Program (NVLAP) for the U.S. by providing accreditation to testing and calibration laboratories based on evaluation of their technical qualifications and competence to perform certain types of tests in specified fields using internationally accepted guides and standards. NIST also designs and implements procedures for accrediting laboratories for their capability to provide calibrations traceable to national standards.

Examples of Accomplishments

Through its work in this activity and subactivity, NIST has delivered significant impact to stakeholders in the Federal Government and industry. Programs managed by the SPO, and SCO have yielded significant impacts.

Special Programs Office:

- In FY 2023, NIST's Special Programs Office and NOAA's Chemical Sciences Laboratory established a collaboration to develop and maintain a new Department of Commerce capability to measure and model U.S. emissions of greenhouse gases and hazardous air pollutants.

A central focus of this joint research effort is the evaluation of associated uncertainties to better qualify the underlying data products and support the interests of researchers and stakeholders in both the traditional air quality (AQ) and greenhouse gas (GHG) mitigation communities.

- The NIST Forensic Science Research Program facilitated the development, validation, and implementation of a Direct Analysis in Real Time – Mass Spectrometry method for the rapid screening of opioid drug samples. The research team worked closely with forensic scientists at the Maryland State Police laboratory to develop an optimized standard operating procedure for analyzing deadly street drugs like fentanyl and its analogs. The effort to transition this emerging technology to a fully validated method that can be used in crime laboratories has significantly reduced case turnaround times. It also led to a collaborative effort between NIST and the Maryland Department of Health to rapidly screen drug residue from paraphernalia obtained at Harm Reduction Sites and from law enforcement task forces across the state. This partnership will enable forensic laboratories and public health officials to better prepare for, detect, and track emerging illegal drugs and their potentially hazardous excipients.

- In FY 2023, the NIST Forensic Science Foundation Studies Program published reports on the scientific foundations of digital investigation techniques and bitemark analysis. These reports fill a need identified in a landmark 2009 study by the National Academies of Sciences, Engineering, and Medicine, which called for research to address issues of accuracy, reliability and validity in many forensic science disciplines. Work is ongoing to complete reports on DNA mixture interpretation and firearm examination.

- The NIST Forensic Science Standards Program, which administers the Organization of Scientific Area Committees (OSAC) for Forensic Science, is currently facilitating the development of over 300 forensic science documentary standards. In FY 2023, the number of standards on OSAC's Registry recommended for adoption have increased from about 100 to over 140. Over 120 Forensic Science Standards Providers (FSSPs) have implemented standards from the OSAC Registry, improving the quality of forensic science practice in the United States.

- NIST updated its Public Access Plan, as part of its Open Data Program, in response to the 2022 OSTP public access memo that significantly strengthened requirements for agencies to provide public access to the results of Federally funded research. Currently, NIST makes more than 5,000 peer-reviewed papers freely available via PubMed Central and more than 15,000 NIST Technical Series publications and reports available via the Government Publishing Office. NIST is making about 100 terabytes of data available for nearly 900 projects collected in the NIST data repository, including forensic science and greenhouse gas data.

Standards Coordination Office:

- NIST directly supports standards development by the participation of nearly 570 NIST technical staff in over 300 standards organizations, on more than 3000 different standards activities. NIST, through the SCO, worked closely with the White House to lead an interagency effort in developing and releasing the first U.S. Government National Standards Strategy for Critical and Emerging Technology (USG NSSCET). The SCO continues to provide support to the U.S. Trade Representative with respect to the important role of documentary standards in trade and has raised the profile of standards as key to national and economic security among key offices in the Executive Office of the President.

- In accordance with the USG NSSCET, SCO continues to coordinate with Federal partners on the U.S. Government's engagement in key standard development areas including critical and emerging technologies such as artificial intelligence, advanced communications, and quantum information science, and biotechnology. As China's engagement in international standards grows, NIST has ramped up coordination and increased its leadership in critical and emerging technology standards, including through the SCO-led Interagency Committee on Standards Policy (ICSP), Commerce Standards Committee (CSC), NIST Documentary Standards Council (NDSC), and via bi- and multi-lateral engagements with partners and allies.

- SCO provides standards training and education across the U.S. Government to improve participation in and use of standards and conformity assessment programs. The SCO also launched the U.S. Government-only publication "International Standards Alert" that provides information about important standards activity occurring in International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), and International Telecommunication Union (ITU), to generate U.S. Government participation and influence in key critical and emerging technology areas.

- SCO is building and strengthening a network of international partners through numerous standard-focused working groups within the U.S.-EU Trade and Technology Council (TTC) and Quad (U.S., Australia, India, Japan). These groups focus on collaboration and technical standards needs.

- SCO published a guide to United States Personal Protective Equipment (PPE) Compliance Requirements. This Guide addresses compliance requirements for PPE used in the workplace, except for PPE used in a nuclear or medical setting. Several U.S. Federal agencies administer regulations associated with PPE.

- SCO provided policy guidance and support on conformity assessments programs with several partner agencies such as the Food and Drug Administration Medical Device and the National Institute for Occupational Safety and Health's Respirator program.

- SCO led the transition from the NotifyUS system in 2022 to the World Trade Organization's (WTO) ePing system which provides worldwide notifications and trade concerns raised by WTO members. This gives more U.S. stakeholders direct access to key regulatory information than most other countries, commenting on approximately three hundred proposed regulatory measures notified through ePing annually.

Many more interesting accomplishments and industry impacts can be found at: https://www.nist.gov/standardsgov/what-we-do/standardization-coordination and at https://www.nist.gov/spo.

Statement of Operating Objectives

Special Programs Office - NIST's SPO plans and manages high-profile programs that span the mission and expertise of multiple NIST laboratories to address critical national needs. To meet these needs, SPO works with and forges partnerships among government, private industry, academia, and professional organizations to provide world-class leadership in advanced measurement science, science-based standards, and data-driven technology innovations. SPO actively fosters communication and collaboration between NIST and external stakeholder communities, as well as agile collaboration across organizational boundaries at NIST.

In Forensic Science, NIST is focused on:

- Advanced Forensic Science Research – NIST researchers work both on technologies for forensic analysis and the mathematical and statistical tools that help quantify confidence in the results of a forensics test. To disseminate this work into the forensic science community, NIST develops measurement protocols, calibration systems, Standard Reference Materials and Data, authoritative guidelines, and works with standards-developing organizations to formalize many of these as consensus standards.

- Science-based Standards Development – Since 2014, NIST has administered the Organization of Scientific Area Committees (OSAC) for Forensic Science Program which brings together over 500 members representing forensic science stakeholders from academia, Federal, state, and local government, and the private sector to facilitate the development of scientifically sound forensic science standards and encourage their adoption across the country. OSAC has over 90 standards listed on its OSAC Registry and has received declarations from over 80 forensic science service providers that have implemented standards listed on the OSAC Registry.

- Scientific Foundation Studies – NIST conducts in-depth reviews to identify priorities for future research, help laboratories identify appropriate limitations on the use of forensic methods, and suggest steps for moving the field forward. NIST recently published two of several scientific foundation reviews on DNA mixture interpretation.

- Operation of the NIST Center of Excellence in Forensics – CSAFE was established in 2015 and renewed in 2020 to help build a statistically sound and scientifically solid foundation for the analysis and interpretation of pattern impression and digital evidence. This multi-university *NIST Center of Excellence* is working to address the issues of accuracy, reliability, and validity of analyses in the examination of pattern and digital evidence.

- NIST plans to expand its Forensic Science Program in four major areas of computational forensic science, forensic science data, forensic science quality assurance, and forensic science education for the legal community.

In Greenhouse Gas Measurements, NIST is focused on:

- Developing and Providing an Innovative Measurement Framework – NIST has made significant progress toward the development of an innovative measurement framework to estimate urban GHG emissions with high accuracy to track progress (one to three percent per year) and at the space and time resolutions required to guide evidence-based decision-making for implementing climate actions. The framework combines two independent methods to measure and map urban greenhouse gas emissions and removals, using one method to calibrate the other.

    - The top-down or atmospheric method measures and maps urban GHG emissions by coupling high accuracy ground-based observing networks and airborne measurements of atmospheric GHG concentrations with numerical weather simulation and statistical optimization methods.

    - The bottom-up method uses advanced GHG accounting methods to provide fine-scale determination of urban greenhouse gas. emissions locations. These maps account for fossil fuel emissions, biogenic sinks, and emissions associated with urban vegetation and agricultural and forested areas surrounding cities.

- Urban Dome Testbeds – NIST established its Urban GHG Measurements Testbed System to demonstrate the feasibility and validity of the new measurement framework. NIST operates testbeds in Indianapolis, the Los Angeles (LA) Air Basin, and the U.S. Northeast Corridor beginning in the Washington, DC/Baltimore regions (NEC/BW) and extending to Boston over time. These testbeds encompass a range of meteorological, climatic, and emissions profiles spanning U.S. urban topographic and meteorological conditions. Recent measurements in the Indianapolis testbed (1 km and hourly resolution) demonstrated a better than 10 percent consistency between the top-down and bottom-up methods. Recent results in the LA and NEC/BW testbeds, using similar methods, detected and accurately quantified GHG reductions before and during the early months of the 2020 pandemic in two significantly different urban typologies.

- U.S. GHG Information Center – NIST plans to establish the U.S. GHG Information Center (USGIC) in partnership with government stakeholders at all levels and with the business, academic, and non-governmental organizations. NIST will develop and provide mature, measurements-based scientific tools, methods, and data to estimate GHG emissions with high accuracy to track progress (one to three percent per year) and with the space and time resolutions required to guide evidence-based decision-making. The validated tools, methods, and data that are disseminated will enable the identification and pursuit of the most efficient and economically viable emission reduction opportunities in urban areas.

- NIST plans to expand its GHG Measurements Program in four major areas:

    - Linking Surface Emissions Measurements to Satellite Observations
    - Fossil Fuel and Biogenic Emissions/Uptake Modeling for Bottom-Up GHG Estimation
    - Measurements and Models for Top-Down GHG Estimation; and
    - International Standards and Measurement Methods.

In Open Data, NIST is focused on:

- Providing public access to results of NIST-funded research (publications, data, code) and expanding system capabilities to enable collection of metadata for other mission-related, administrative, and operational data.

- Addressing other requirements of the Evidence Act, including assessment of staff data skills and the maturity of the data program as well as facilitating staff access to training in data literacy and in data skills appropriate for the roles they fill.

- Ensuring that information NIST releases is accessible both in terms of Section 508 compliance and the efforts to make information available to underserved communities.

- Planning to establish a new Gateway to Innovation that will allow stakeholders to easily locate NIST products and see the relationships among them. For example, if data is associated with a publication about characterization of a Standard Reference Material using equipment for which NIST has obtained a patent, all five items will be returned in a search. Currently, users must search five separate portals and are not informed about the other related resources available.

Standards Coordination Office - NIST's SCO plays a unique role in the Federal Government in coordinating Federal standards activities with those of the private sector and as a resource to Federal agencies and the private sector on the U.S. approach to standards and conformity. Thus, SCO is well-positioned to support the Administration priorities addressing trade, technology, innovation, and competitiveness. SCO will continue its effort to raise awareness and improve information sharing relating to emerging standards issues among Federal agencies. Such information sharing is a critical component of ensuring that agencies can understand and respond to developments in the U.S. and abroad that can impact U.S. competitiveness and innovation.

Examples of efforts include work currently underway in collaboration with NIST's Information Technology Laboratory: two labeling programs on cybersecurity capabilities of Internet-of-Things (IoT) consumer devices and software development practices. The SCO is also supporting several efforts targeting artificial intelligence, and space commerce-related standard's needs. These efforts also include a strong element of partnership with the U.S. private sector and particularly the U.S. standards system, coordinated by the American National Standards Institute (ANSI), which represents U.S. interests in standards developing bodies such as ISO and the International Electrotechnical Commission.

Baldrige Performance Excellence Program - Baldrige helps organizations address a dynamic environment, focus on strategy-driven performance, achieve customer and workforce engagement, and improve governance and ethics, societal responsibilities, competitiveness, and long-term organizational sustainability. It offers participants a comprehensive management approach that focuses on results in all areas, organizational and personal learning, and knowledge sharing.

Explanation and Justification

Line Item		2023 Actual		2024 Annualized CR		2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
Standards Coordination and Special Programs	Pos./BA	225	$172,207	225	$171,866	225	$173,996
.	FTE/Obl	200	157,597	218	204,347	218	173,996

Standards Coordination and Special Programs (Total Funding: $174.0 million and 225 Positions)

The FY 2025 base budget request is at the same programmatic level as the FY 2024 level, adjusted for inflation. The Nation's founders knew the importance of weights and measures – that it is critical to commerce and trade and a critical role of the Federal Government. Section 8 of Article I of the Constitution gives the Government the power to "fix the Standard of Weight and Measures" and Congress established the National Bureau of Standards (renamed NIST in 1988) in 1901 for that purpose. This role makes NIST a National Metrology Institute responsible for the dissemination of the fundamental units of measurement – the basis of international trade and commerce, and scientific progress. NIST is commonly recognized as the best in the world at what it does as a National Metrology Institute. The research managed by the SPO depends upon the one-of-a-kind measurement expertise provided by the NIST laboratories to solve problems of national significance.

In the areas of documentary standards which is the purview of the SCO, NIST also has a unique role. The National Technology Transfer Advancement Act of 1995 (P.L. 104-113) and OMB Circular A-119 assign NIST the responsibility of coordinating Federal Government activities in the documentary standards development and conformity assessment procedures. NIST provides a forum for Federal agency representatives to learn about standards and conformity assessment developments in the U.S. and abroad, share perspectives that can inform agency or USG positions on standards, and exchange current practices. By leading this Committee, NIST complements the coordination role provided by ANSI for the private sector.

In addition, approximately 570 NIST technical staff from five of NIST's laboratories (excluding user facilities) play a significant role in documentary standards development process by participating in almost 300 unique standards development organizations and contributing their technical skills and expertise in over 3,000 standards activities, including 100 standards-related leadership roles. Documentary standards development activities are effective means for disseminating NIST-developed technologies and measurement protocols since industry actively participates and rapidly adopts these standards.

The work supported by the Standards Coordination and Special Programs line item is primarily aligned with the NIST Laboratory work described in the Fundamental Measurement, Quantum Science, and Measurement Dissemination portfolio with an emphasis on measurement dissemination related activities.

The base funding request for NIST's Standards Coordination and Special Programs supports the following ongoing mission functions and programmatic areas, which are also described in more detail in the Laboratory Programs section of this budget request:

- Exploratory Measurement Science ($2.0 million)
- Advanced Manufacturing and Material Measurements ($12.9 million)
- Fundamental Measurement, Quantum Science, and Measurement Dissemination ($78.2 million)
- Advanced Communications, Networks, and Scientific Data Systems ($4.3 million)
- Health and biological systems measurements ($2.1 million)
- Physical Infrastructure and Resilience ($5.1 million)
- User Facilities ($4.1 million)

Additionally, this Activity/Subactivity funds the Baldrige Performance Excellence Program at $2.8 million and includes $62.5 million in external projects/earmarks.

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM CHANGES FOR 2025
(Dollar amounts in thousands)

		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
Removal of One-time	Pos/BA	0	$62,532	0	0	0	($62,532)
Congressional External	FTE/Obl.	0	62,532	0	0	0	(62,532)
Community Projects							

Removal of One-time Congressional External Community Projects (-$62,532,000, 0 FTE/0 Position) - This program change removes funding for one-time congressionally directed projects provided in the FY 2023 enacted bill, FY 2024, and FY 2025 base.

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM CHANGE DETAIL BY OBJECT CLASS

(Direct Obligations amounts in thousands)

Activity: Measurement Science, Services, and Programs
Subactivity: Standards Coordination and Special Programs

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11.1	Full-time permanent compensation	$25,453	$27,548	$28,456	$28,456	0
11.3	Other than full-time permanent	1,847	1,944	2,008	2,008	0
11.5	Other personnel compensation	857	902	932	932	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	Total personnel compensation	28,157	30,394	31,396	31,396	0
12.1	Civilian personnel benefits	10,403	11,074	11,252	11,252	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	1,576	1,576	1,586	1,586	0
22	Transportation of things	21	21	21	21	0
23	Rent, communications, and utilities	0	0	0	0	0
23.1	Rental payments to GSA	0	0	47	47	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and misc. charges	0	0	220	220	0
24	Printing and reproduction	17	17	17	17	0
25	Other contractual services	0	0	0	0	0
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services from non-Federal sources	8,060	34,902	19,841	19,841	0
25.3	Other goods and services from Federal sources	2,583	2,583	2,836	2,836	0
25.4	Operation and maintenance of facilities	0	0	0	0	0
25.5	Research and development contracts	1,687	1,687	1,687	1,687	0
25.6	Medical care	0	0	0	0	0
25.7	Operation and maintenance of equipment	991	991	991	991	0
25.8	Subsistence and support of persons	0	0	0	0	0
26	Supplies and materials	1,175	1,175	1,175	1,175	0
31	Equipment	2,378	2,378	2,378	2,378	0
32	Lands and structures	0	0	0	0	0
33	Investments and loans	0	0	0	0	0
41	Grants, subsidies and contributions	100,549	117,549	100,549	38,017	($62,532)
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	3	3	3	3	0
44	Refunds	0	0	0	0	0
99.9	Total obligations	157,597	204,347	173,996	111,464	(62,532)

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM CHANGES FOR 2025
(Dollar amounts in thousands)

		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
STRS SCO-SPO Program	Pos/BA	225	$173,996	225	$170,920	0	($3,076)
Reduction to Offset Inflationary Costs	FTE/Obl.	218	173,996	218	170,920	0	(3,076)

STRS Standards Coordination and Special Programs (SCO-SPO) Reduction to Offset Inflationary Costs (-$3,076,000, 0 FTE/0 Position) – SCO-SPO will continue to support the NIST Centers of Excellence Program, however, to offset inflationary costs, SCO-SPO will reduce the grant amounts provided for each of the three NIST Centers of Excellence programs.

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
PROGRAM CHANGE DETAIL BY OBJECT CLASS

(Direct Obligations amounts in thousands)

Activity: Measurement Science, Services, and Programs
Subactivity: Standards Coordination and Special Programs

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11.1	Full-time permanent compensation	$25,453	$27,548	$28,456	$28,456	0
11.3	Other than full-time permanent	1,847	1,944	2,008	2,008	0
11.5	Other personnel compensation	857	902	932	932	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	Total personnel compensation	28,157	30,394	31,396	31,396	0
12.1	Civilian personnel benefits	10,403	11,074	11,252	11,252	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	1,576	1,576	1,586	1,586	0
22	Transportation of things	21	21	21	21	0
23	Rent, communications, and utilities	0	0	0	0	0
23.1	Rental payments to GSA	0	0	47	47	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and misc. charges	0	0	220	220	0
24	Printing and reproduction	17	17	17	17	0
25	Other contractual services	0	0	0	0	0
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services from non-Federal sources	8,060	34,902	19,841	19,841	0
25.3	Other goods and services from Federal sources	2,583	2,583	2,836	2,836	0
25.4	Operation and maintenance of facilities	0	0	0	0	0
25.5	Research and development contracts	1,687	1,687	1,687	1,687	0
25.6	Medical care	0	0	0	0	0
25.7	Operation and maintenance of equipment	991	991	991	991	0
25.8	Subsistence and support of persons	0	0	0	0	0
26	Supplies and materials	1,175	1,175	1,175	1,175	0
31	Equipment	2,378	2,378	2,378	2,378	0
32	Lands and structures	0	0	0	0	0
33	Investments and loans	0	0	0	0	0
41	Grants, subsidies and contributions	100,549	117,549	100,549	97,473	($3,076)
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	3	3	3	3	0
44	Refunds	0	0	0	0	0
99.9	Total obligations	157,597	204,347	173,996	170,920	(3,076)

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$310,978	$339,234	$342,065	$350,168	$8,103
11.3	Other than full-time permanent	23,092	24,304	24,909	24,909	0
11.5	Other personnel compensation	9,318	10,321	11,732	11,732	0
11.9	**Total personnel compensation**	343,388	373,859	378,706	386,809	8,103
12.1	Civilian personnel benefits	124,986	135,477	137,967	140,550	2,583
13	Benefits for former personnel	56	56	56	56	0
21	Travel and transportation of persons	11,018	11,127	11,136	11,439	303
22	Transportation of things	491	533	502	613	111
23.1	Rental payments to GSA	159	159	1,733	1,733	0
23.2	Rental payments to others	1,978	1,978	2,022	2,022	0
23.3	Communications, utilities, and miscellaneous charges	23,181	27,189	25,963	32,477	6,514
24	Printing and reproduction	546	599	558	732	174
25.1	Advisory and assistance services	1,502	1,310	1,368	1,368	0
25.2	Other services from non-Federal sources	49,881	163,056	40,539	47,284	6,745
25.3	Other goods and services from Federal sources	62,669	68,495	65,331	66,773	1,442
25.5	Research and development contracts	52,050	55,050	53,195	67,645	14,450
25.7	Operation and maintenance of equipment	19,167	20,060	19,589	20,368	779
26	Supplies and materials	34,961	35,312	35,731	37,388	1,657
31	Equipment	43,701	43,973	44,662	48,911	4,249
32	Land and structures	231	231	231	231	0
41	Grants, subsidies, and contributions	159,707	161,707	159,707	110,099	(49,608)
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	2	2	2	2	0
99	Total Obligations	929,674	1,100,173	978,998	976,500	(2,498)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	$929,674	$1,100,173	$978,998	$976,500	($2,498)
	Less Prior Year Recoveries	(6,990)	0	0	0	0
	Less Prior Year Refunds	(58)	0	0	0	0
	Less prior year unobligated balance	(73,805)	(145,673)	0	0	0
	Plus Unobligated Balance, End of Year	145,673	0	0	0	0
	Plus Unobligated Balance, Expired	6	0	0	0	0
	Total Budget Authority	994,500	954,500	978,998	976,500	(2,498)
	Transfers from DoJ for Office of Law Enforcement Standards	(1,500)	(1,500)	0	(1,500)	(1,500)
	Appropriation	993,000	953,000	978,998	975,000	(3,998)

Personnel Data

Full-time Equivalent Employment:					
Full-time permanent	2,244	2,415	2,415	2,479	64
Other than full-time permanent	246	246	246	246	0
Total	2,490	2,661	2,661	2,725	64
Authorized Positions:					
Full-time permanent	2,732	2,732	2,732	2,817	85
Other than full-time permanent	76	76	76	76	0
Total	2,808	2,808	2,808	2,893	85

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
Activity/Subactivity: Laboratory Programs
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$282,138	$308,041	$309,838	$317,941	$8,103
11.3	Other than full-time permanent	20,999	22,101	22,633	22,633	0
11.5	Other personnel compensation	8,347	9,299	10,676	10,676	0
11.9	**Total personnel compensation**	311,484	339,441	343,147	351,250	8,103
12.1	Civilian personnel benefits	113,223	122,960	125,248	127,831	2,583
13	Benefits for former personnel	56	56	56	56	0
21	Travel and transportation of persons	8,717	8,826	8,824	9,127	303
22	Transportation of things	460	502	471	582	111
23.1	Rental payments to GSA	159	159	1,680	1,680	0
23.2	Rental payments to others	1,978	1,978	2,022	2,022	0
23.3	Communications, utilities, and miscellaneous charges	23,181	27,189	25,713	32,227	6,514
24	Printing and reproduction	521	574	533	707	174
25.1	Advisory and assistance services	1,502	1,310	1,368	1,368	0
25.2	Other services from non-Federal sources	37,890	124,486	17,085	22,330	5,245
25.3	Other goods and services from Federal sources	58,800	64,626	61,174	62,616	1,442
25.5	Research and development contracts	49,524	52,524	50,669	65,119	14,450
25.7	Operation and maintenance of equipment	17,683	18,576	18,105	18,884	779
26	Supplies and materials	32,754	33,105	33,524	35,181	1,657
31	Equipment	37,279	37,551	38,240	42,489	4,249
32	Land and structures	231	231	231	231	0
41	Grants, subsidies, and contributions	59,158	44,158	59,158	75,158	16,000
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	2	2	2	2	0
99	Total Obligations	754,602	878,254	787,250	848,860	61,610

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	$754,602	$878,254	$787,250	$848,860	$61,610
	Less Prior Year Recoveries	(6,291)	0	0	0	0
	Less Prior Year Refunds	(58)	0	0	0	0
	Less prior year unobligated balance	(59,506)	(114,580)	0	0	0
	Plus Unobligated Balance, End of Year	114,580	0	0	0	0
	Plus Unobligated Balance, Expired	6	0	0	0	0
	Total Budget Authority	803,333	763,674	787,250	848,860	61,610
	Transfers from DoJ for Office of Law Enforcement Standards	0	0	0	0	0
	Appropriation	803,333	763,674	787,250	848,860	61,610
	Personnel Data					
	Full-time Equivalent Employment:					
	Full-time permanent	2,039	2,190	2,190	2,254	64
	Other than full-time permanent	223	223	223	223	0
	Total	2,262	2,413	2,413	2,477	64
	Authorized Positions:					
	Full-time permanent	2,483	2,483	2,483	2,568	85
	Other than full-time permanent	69	69	69	69	0
	Total	2,552	2,552	2,552	2,637	85

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
Activity/Subactivity: Corporate Services
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$3,387	$3,645	$3,771	$3,771	0
11.3	Other than full-time permanent	246	259	268	268	0
11.5	Other personnel compensation	114	120	124	124	0
11.9	**Total personnel compensation**	3,747	4,024	4,163	4,163	0
12.1	Civilian personnel benefits	1,360	1,443	1,467	1,467	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	725	725	726	726	0
22	Transportation of things	10	10	10	10	0
23.1	Rental payments to GSA	0	0	6	6	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and miscellaneous charges	0	0	30	30	0
24	Printing and reproduction	8	8	8	8	0
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services from non-Federal sources	3,931	3,668	3,613	3,613	0
25.3	Other goods and services from Federal sources	1,286	1,286	1,321	1,321	0
25.5	Research and development contracts	839	839	839	839	0
25.7	Operation and maintenance of equipment	493	493	493	493	0
26	Supplies and materials	1,032	1,032	1,032	1,032	0
31	Equipment	4,044	4,044	4,044	4,044	0
32	Land and structures	0	0	0	0	0
41	Grants, subsidies, and contributions	0	0	0	0	0
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
99	Total Obligations	17,475	17,572	17,752	17,752	0

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	$17,475	$17,572	$17,752	$17,752	0
	Less Prior Year Recoveries	(90)	0	0	0	0
	Less Prior Year Refunds	0	0	0	0	0
	Less prior year unobligated balance	(37)	(112)	0	0	0
	Plus Unobligated Balance, End of Year	112	0	0	0	0
	Total Budget Authority	17,460	17,460	17,752	17,752	0
	Transfer from Election Assistance Commission	0	0	0	0	0
	Transfers from DoJ for Office of Law Enforcement Standards	0	0	0	0	0
	Appropriation	17,460	17,460	17,752	17,752	0
	Personnel Data					
	Full-time Equivalent Employment:					
	Full-time permanent	25	27	27	27	0
	Other than full-time permanent	3	3	3	3	0
	Total	28	30	30	30	0
	Authorized Positions:					
	Full-time permanent	30	30	30	30	0
	Other than full-time permanent	1	1	1	1	0
	Total	31	31	31	31	0

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
Activity/Subactivity: Standards Coordination and Special Programs
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decreas from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$25,453	$27,548	$28,456	$28,456	0
11.3	Other than full-time permanent	1,847	1,944	2,008	2,008	0
11.5	Other personnel compensation	857	902	932	932	0
11.9	**Total personnel compensation**	28,157	30,394	31,396	31,396	0
12.1	Civilian personnel benefits	10,403	11,074	11,252	11,252	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	1,576	1,576	1,586	1,586	0
22	Transportation of things	21	21	21	21	0
23.1	Rental payments to GSA	0	0	47	47	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and miscellaneous charges	0	0	220	220	0
24	Printing and reproduction	17	17	17	17	0
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services from non-Federal sources	8,060	34,902	19,841	21,341	$1,500
25.3	Other goods and services from Federal sources	2,583	2,583	2,836	2,836	0
25.5	Research and development contracts	1,687	1,687	1,687	1,687	0
25.7	Operation and maintenance of equipment	991	991	991	991	0
26	Supplies and materials	1,175	1,175	1,175	1,175	0
31	Equipment	2,378	2,378	2,378	2,378	0
32	Land and structures	0	0	0	0	0
41	Grants, subsidies, and contributions	100,549	117,549	100,549	34,941	(65,608)
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
99	Total Obligations	157,597	204,347	173,996	109,888	(64,108)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	$157,597	$204,347	$173,996	$109,888	($64,108)
	Less Prior Year Recoveries	(609)	0	0	0	0
	Less Prior Year Refunds	0	0	0	0	0
	Less prior year unobligated balance	(14,262)	(30,981)	0	0	0
	Plus Unobligated Balance, End of Year	30,981	0	0	0	0
	Total Budget Authority	173,707	173,366	173,996	109,888	(64,108)
	Transfer from Election Assistance Commission	0	0	0	0	0
	Transfers from DoJ for Office of Law Enforcement Standards	(1,500)	(1,500)	0	(1,500)	(1,500)
	Appropriation	172,207	171,866	173,996	108,388	(65,608)
	Personnel Data					
	Full-time Equivalent Employment:					
	Full-time permanent	180	198	198	198	0
	Other than full-time permanent	20	20	20	20	0
	Total	200	218	218	218	0
	Authorized Positions:					
	Full-time permanent	219	219	219	219	0
	Other than full-time permanent	6	6	6	6	0
	Total	225	225	225	225	0

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
APPROPRIATION LANGUAGE AND CODE CITATIONS

1. For necessary expenses of the National Institute of Standards and Technology,

15 U.S.C. 272; 273; 278b-j; p
15 U.S.C. 290b-f
15 U.S.C. 1151-52
15 U.S.C. 1454(d-e)
15 U.S.C. 1511, 1512
15 U.S.C. 3710a-d
15 U.S.C. 3711a
15 U.S.C. 7301-7313
15 U.S.C. 7406
15 U.S.C. 7506(a)

15 U.S.C. 272; 273; 278b-j; provides basic authority for the performance of the functions and activities of the National Institute of Standards and Technology, authorizes appropriations for these purposes to be provided to the general public and specific institutions, governments, firms, and individuals, and requires the notification of Congress of a reprogramming of funds that exceeds a limit specified in public law.

15 U.S.C. 290b-f directs the Secretary of Commerce to provide for the collection, compilation, critical evaluation, publication, and dissemination of standard reference data and the authority to establish a non-agricultural technology office.

15 U.S.C. 1151-1152 establishes within the Department of Commerce, a central clearinghouse for technical information useful to American business and industry and provides for the dissemination of this technical, scientific information via the National Technical Information Service.

15 U.S.C. 1454(d-e) provides NIST with the authority to request that manufacturers and distributors of a commodity participate in voluntary product standards when there is undue proliferation of weights, measures, and quantities. Reports and recommendations to Congress are to be made upon industry failure to adopt these standards.

15 U.S.C. 1511, 1512 specifies that all bureaus of the Department of Commerce come under the authority of the Secretary of Commerce and that such bureaus including NIST shall be subject to the authority of the Secretary of Commerce.

15 U.S.C. 3710a-d provides the authority to enter into CRADAs, to make cash awards to scientific personnel for inventions, to retain royalties and to distribute royalties for inventions, and to communicate and coordinate for the Offices of Research and Technology Applications in Federal laboratories.

15 U.S.C. 3711a provides the authority for the Baldrige National Quality Award.

15 U.S.C. 7301-7313 establishes National Construction Safety Teams within NIST to respond to building and structural emergencies.

15 U.S.C. 7406 provides authority for NIST to conduct Cyber Security Research and Development to minimize security risks associated with computer systems used by the Federal Government.

15 U.S.C. 7506(a) provides for the establishment of a nanotechnology research and development program within NIST.

P.L. 110-143 121 STAT 1809 provides NIST to assist in developing a research program to establish guidelines for the remediation of former methamphetamine laboratories in the United States as well as developing new detection technologies and appropriate Standard Reference Materials for methamphetamine detection testing.

2. $975,000,000, to remain available until expended,
3. of which not to exceed $9,000,000 may be transferred to the "Working Capital Fund." 15 U.S.C. 278b 15 U.S.C. 278b provides in part: "The National Institute of Standards and Technology is authorized to utilize in the performance of its functions the Working Capital Fund".

4. Public Law 110-69, America Competes Act, 121 Stat 572, passed August 9, 2007, reauthorizes the Scientific and Technical Research and Services appropriation through 2010. Public Law 111-358, America Competes Reauthorization Act, 2010, 124 Stat 3982, passed January 4, 2011, reauthorized the Scientific and Technical Research and Standards appropriation through 2013. In addition, an Emergency Communication and Tracking Technologies Research initiative and a Green Manufacturing and Construction initiative were authorized to develop advanced technologies in these areas.

5. Public Law 111-5, American Recovery and Reinvestment Act of 2009 made available funding to include $20,000,000 via transfer from the Department of Health and Human Services for continued work on advancing health care information enterprise integration.

6. Public Law 113-274 Cybersecurity Enhancement Act of 2014 amended Section 2c of the National Institute of Standards and Technology Act (15 U.S.C. 272(c) and established a Public-Private collaboration on Cybersecurity by designating the Director of the Institute activities that facilitate and support on an ongoing basis the development of a voluntary, consensus-based, industry-led set of standards, guidelines, best practices, methodologies, procedures, and processes to cost-effectively reduce cyber risks to the critical infrastructure of the United States.

7. Public Law 116-136, The Coronavirus Aid, Relief, and Economic Security Act, (CARES Act), as enacted March 27, 2020, made available funding, $6,000,000 for Scientific and Technical Research and Services “to remain available until September 30, 2021, to prevent, prepare for, and respond to coronavirus, domestically or internationally, by supporting continuity of operations, including measurement science to support viral testing and bio-manufacturing.”

8. Public Law 117-43, Extending Government Funding and Delivering Emergency Assistance Act made available funding to include $22,000,000 to remain available until September 30, 2023, and specific to carrying out investigations of building failures pursuant to the National Construction Safety Team Act of 2002.

9. Public Law 117-328, Consolidated Appropriations Act, 2023 made available funding to include $40,000,000 to remain available until expended, and specific to investigate the impacts of hurricanes, typhoons, and wildfires in calendar year 2022 to support the development of resilience standards with regard to weather and climate disasters, in addition to the underlying research to support those standards, and for necessary expenses to carry out investigations of building failures pursuant to the National Construction Safety Team Act of 2002.

Department of Commerce
National Institute of Standards and Technology
Scientific and Technical Research and Services
ADVISORY AND ASSISTANCE SERVICES
(Obligations in thousands of dollars)

	FY 2023 Actual	FY 2024 Annualized CR	FY 2025 Estimate
Consulting Services			
Management and professional support services	$353	$173	$181
Studies, analyses, and evaluations	1,045	820	863
Engineering and technical services	104	317	324
Total	1,502	1,310	1,368

Significant Activities

Advisory and assistance services funded by the STRS appropriation include the review and evaluation of the technical functions and operations of NIST by the Board on Assessment of the National Academy of Sciences. The evaluation panels consider the importance and relative priority of projects, quality of staff, equipment needs, and finances, and the relation of the programs to the mission of NIST.

Need for Advisory and Assistance Services

The need for advisory and assistance services stems from the NIST role in dealing with the private sector, professional organizations, and the public sector. Inputs must be obtained from consultants who can bring their individual expertise to bear and help NIST in assessing its program plans to meet the needs of its customers. The alternative to utilizing these services is to make no attempt to have expertise from sources outside NIST and risk degradation of the working and professional relationship with those in the business of using the products and services offered by NIST.

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services [1/]
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations	Appro-priation
2024 Annualized CR	131	123	$212,000	$251,155	$212,000
2025 Adjustments to Base					
Annualization of positions financed in FY 2024	0	0	0	0	0
Plus: Inflationary Adjustments to Base	0	0	1,176	1,176	1,176
2025 Base	131	123	213,176	252,331	213,176
Plus: 2025 Program changes	0	0	(1,176)	(1,176)	(1,176)
2025 Estimate	131	123	212,000	251,155	212,000

Comparison by activity with totals by activity		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Technology Innovation Program	Pos./Approp	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	0	0	$71	0	0	0	0	0	0
Hollings Manufacturing Extension Partnership	Pos./Approp	97	$188,000	97	175,000	97	$175,911	97	$175,000	0	($911)
	FTE/Obl.	89	185,016	96	184,012	96	175,911	96	175,000	0	(911)
Manufacturing USA	Pos/Approp	34	51,000	34	37,000	34	37,265	34	37,000	0	(265)
	FTE/Obl.	23	22,691	27	67,072	27	37,265	27	37,000	0	(265)
TOTALS	Pos./Approp	131	239,000	131	212,000	131	213,176	131	212,000	0	(1,176)
	FTE/Obl.	112	207,707	123	251,155	123	213,176	123	212,000	0	(1,176)
Adjustments for											
Recoveries			(862)		0		0		0		0
Refunds			(4)		0		0		0		0
Unobligated balance, start of year			(6,996)		(39,155)		0		0		0
Unobligated balance, end of year			39,155		0		0		0		0
Budget Authority/Appropriation			239,000		212,000		213,176		212,000		(1,176)
Adjustments for											
Plus restoration of cancellation of anticipated recoveries			0		0		0		0		0
Plus restoration of unobligated balances rescission			0		0		0		0		0
Appropriation			239,000 [2/]		212,000		213,176		212,000		(1,176)

[1/] Doesn't include actual obligation of $5.6M in FY 2023 and estimate obligations of $6,415.8M in FY 2024 and $1,607.5M in FY 2025 funded by Mandatory CHIPS.

[2/] Including enacted amount of $27M from the Disaster Relief Supplemental Appropriations Act, 2023.

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Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
ADJUSTMENTS TO BASE
(Dollar amounts in thousands)

	Perm. Pos.	FTE	Amount
Transfer	…	…	0
Adjustment	…	…	0
Financing	…	…	0
Other Changes:			
FY 2024 pay raise	…	…	$239
FY 2025 pay raise	…	…	343
Change in compensable days	…	…	0
Annualization of positions financed in FY 2024	0	0	
Awards	…	…	47
Personnel benefits:			
Civil Service Retirement System (CSRS)	…	…	(5)
Federal Employees' Retirement System (FERS)	…	…	(6)
Thrift Savings Plan (TSP)	…	…	(13)
Federal Insurance Contribution Act (FICA)	…	…	30
Health insurance	…	…	37
Employees' Compensation Fund	…	…	0
Travel and transportation of persons:			
Mileage	…	…	0
Per Diem	…	…	1
Communications, utilities, and miscellaneous charges:			
HCHB Electricity	…	…	0
HCHB Water/Sewer	…	…	0
Electricity rate	…	…	89
Natural gas rate	…	…	172
Other services:			
Working Capital Fund Departmental Management	…	…	0
Cybersecurity (Non-Add in WCF)			[0]
NARA storage costs	…	…	0
General pricing level adjustment	…	…	242
Subtotal, Other Changes	0	0	1,176
Total, Adjustments to base	0	0	1,176

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Technology Innovation Program

Line Item		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Technology Innovation Program	Pos./Approp	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	0	0	$71	0	0	0	0	0	0

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Hollings Manufacturing Extension Partnership

Line Item		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Hollings Manufacturing	Pos./Approp	97	$188,000 [1/]	97	$175,000	97	$175,911	97	$175,000	0	($911)
Extension Partnership	FTE/Obl.	89	185,016	96	184,012	96	175,911	96	175,000	0	(911)

[1/] Including enacted amount of $13M from the Disaster Relief Supplemental Appropriations Act, 2023.

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
JUSTIFICATION OF PROGRAM AND PERFORMANCE
(Dollar amounts in thousands)

Activity: Hollings Manufacturing Extension Partnership

Goal Statement

The Hollings Manufacturing Extension Partnership Program (MEP) is a public-private partnership program that provides U.S. small and medium-sized manufacturers (SMMs) with access to industry experts, resources, and technology. The MEP program serves SMMs through the MEP National Network that includes NIST MEP staff, MEP Centers in every state and Puerto Rico, and other federal, state, local, academic, and industry partners. MEP Centers are the program's "boots-on-the-ground" and work directly with their local manufacturing communities to strengthen the competitiveness of the U.S. manufacturing base. MEP Centers are funded through a cost-sharing arrangement consisting of support from the Federal government, non-Federal sources including state and local government/entities, and fees charged to the manufacturing clients for services provided by the MEP Centers.

Base Program

The national network of 51 MEP Centers developed a wide range of services and initiatives to enable manufacturers to identify opportunities that will accelerate and strengthen growth and competitiveness in the global marketplace. Each MEP Center works directly with area manufacturers to provide expertise and services such as product and market development tools and resources, lean consulting to improve operations and processes, supply chain optimization and supplier scouting, growth services, and customized workforce development services. MEP Centers also connect SMMs to new technologies, technical infrastructure, and specialized knowledge. In 2022, MEP Centers interacted with more than 33,500 manufacturers and delivered projects that led to $18.8 billion in sales, $2.5 billion in cost savings, $6.4 billion in new client investments, and helped create or retain more than 116,700 jobs. Additionally, NIST MEP provides technical assistance in food safety best practices, accelerating the adoption of advanced manufacturing technologies, addressing emerging manufacturing needs, exporting and international business, advising on cybersecurity of supply chains, and transferring technology from NIST Laboratories and other Federal research organizations.

In 1988, Congress passed the Omnibus Trade and Competitiveness Act of 1988 (P.L. 100-418) that created a program within NIST to assist U.S. manufacturing through cooperative efforts. The statute was amended in the America COMPETES Acts of 2007 and 2010 and MEP was reauthorized through the American Innovation and Competitiveness Act (P.L. 114-329), which was signed into law January 2017. For over thirty years, MEP Centers have acted as the go-to experts to promote business growth and connect manufacturers to public and private resources essential for increased competitiveness and profitability. Since 1988, MEP has worked with over 142,000 manufacturers and MEP clients have reported $144.4 billion in new sales, $28.7 billion in cost savings, and over 1.5 million jobs that were created and retained since 1988.

Examples of Accomplishments

Program accomplishments and industry impact for the program can be found at: MEP National Network FY 22 Impacts Overview: (MEPNN FY22 Impacts Overview 5-22-23.pdf (nist.gov)

Statement of Operating Objectives

MEP will serve as the primary source of assistance for growth-oriented U.S.-based SMMs, supporting operationally resiliency and preparedness in responding to critical immediate and long-term needs.

Explanation and Justification

Line Item		2023 Actual		2024 Annualized CR		2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
Hollings Manufacturing Extension Partnership	Pos./BA	97	$188,000	97	$175,000	97	$175,911
	FTE/Obl	89	185,016	96	184,012	96	175,911

- MEP plans to build on its tradition of delivering impactful services to SMMs, particularly growing the National Network's established activities that strengthen the U.S. manufacturing workforce. The MEP program identified three strategic goals in its new 2023-2027 MEP National Network Strategic Plan to strengthen U.S. manufacturing and empower SMMs. These goals are to mitigate supply chain vulnerabilities, narrow the workforce gap, and leverage technology.

- MEP Centers assist SMMs to address supply chain challenges through supply chain mapping and risk assessments, supplier scouting, process improvement and supplier development, and procurement and supply chain management strategy services. In FY 2025, MEP will continue the recently established National Supply Chain Optimization and Intelligence Network that scales supply chain expertise and proven solutions that deliver value to SMMs in every MEP Center and coordinates with large manufacturers for their downstream supplier opportunities.

- MEP Centers deliver customized workforce development solutions, such as industry-related certification, leadership trainings, upskilling, apprenticeships, and comprehensive workforce services that help SMMs recruit, retrain, and retain in-demand manufacturing talent. In addition to workforce development projects delivered by the 51 MEP Centers, three Centers were awarded over $2.7 million through FY 2023 to expand the availability and quality of K-12 programs to prepare students for manufacturing careers, increase diversity of manufacturing and engineering talent, and identify and scale up effective solutions for national workforce development improvement. With MEP Centers positioned as partners in critical workforce ecosystems throughout the U.S., MEP will lead by connecting local and national efforts to make manufacturers' workforces look more representative of our country's diversity.

- MEP will support the creation of more technology demonstration centers to support the deployment of advanced manufacturing technologies, especially in rural markets. MEP Centers develop and deliver technical assistance to support the adoption of advanced manufacturing technology, such as Industry 4.0, digital manufacturing, flexible automation/collaborative robotics, artificial intelligence, additive manufacturing, and smart manufacturing. MEP Centers also deliver cybersecurity awareness, training, and technical assistance that are critical to the resilience of SMMs, especially for small defense contractors. MEP will continue to execute partnerships, for example with the Department of Defense, to serve thousands of U.S. defense contractors across the country.

- MEP Centers continue to focus on service delivery to rural manufacturers and to very small manufacturers (with fewer than 20 employees). MEP Centers will continue to focus on increasing the share of smaller clients that receive MEP services with a goal that over 50 percent of all completed projects are delivered to manufacturers with fewer than 50 employees. Similarly, MEP's goals include working with traditionally underserved populations including women-owned companies and minority-owned companies. MEP will enhance its services to these groups because of MEP's increased emphasis on delivering assistance to drive equitable, resilient, place-based economic development.

- MEP Centers perform assessments of SMMs in areas subject to a FEMA Disaster Declaration. Assessments are designed to identify the impact, if any, to the operations of the SMMs as result of the subject disaster. MEP Centers assist impacted SMMs in identifying and accessing Federal, State, and local resources to aid in business recovery efforts and, as appropriate, in the development of a risk mitigation plan for future disasters.

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
PROGRAM CHANGES FOR 2025
(Dollar amounts in thousands)

		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
MEP Program Reduction to Offset	Pos/BA	97	$175,911	97	$175,000	0	($911)
Inflationary Costs	FTE/Obl.	96	175,911	96	175,000	0	(911)

MEP Program Reduction to Offset Inflationary Costs (-$911,000, 0 FTE/0 Position) – MEP will maintain the funding levels for MEP Centers at the FY 2024 levels. However, to offset inflationary costs in FY 2025, MEP will reduce non-MEP Center contracts within the program by $911 thousand.

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
PROGRAM CHANGE DETAIL BY OBJECT CLASS
(Direct Obligations amounts in thousands)

Activity: Hollings Manufacturing Extension Partnership Program
Subactivity: Hollings Manufacturing Extension Partnership Program

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11.1	Full-time permanent compensation	$11,600	$12,277	$12,604	$12,604	0
11.3	Other than full-time permanent	835	880	902	902	0
11.5	Other personnel compensation	317	342	359	359	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	Total personnel compensation	12,752	13,499	13,865	13,865	0
12.1	Civilian personnel benefits	4,825	5,073	5,230	5,230	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	305	305	306	303	($3)
22	Transportation of things	6	6	7	7	0
23	Rent, communications, and utilities	0	0	0	0	0
23.1	Rental payments to GSA	9	9	9	9	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and misc. charges	1,353	1,353	1,550	1,453	(97)
24	Printing and reproduction	5	5	6	6	0
25	Other contractual services	0	0	0	0	0
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services from non-Federal sources	7,292	7,292	7,411	6,643	(768)
25.3	Other goods and services from Federal sources	1,718	1,718	1,733	1,715	(18)
25.4	Operation and maintenance of facilities	0	0	0	0	0
25.5	Research and development contracts	2	2	17	17	0
25.6	Medical care	0	0	0	0	0
25.7	Operation and maintenance of equipment	365	365	365	365	0
25.8	Subsistence and support of persons	0	0	0	0	0
26	Supplies and materials	555	555	578	569	(9)
31	Equipment	457	457	473	457	(16)
32	Lands and structures	0	0	0	0	0
33	Investments and loans	0	0	0	0	0
41	Grants, subsidies and contributions	155,372	153,373	144,361	144,361	0
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
44	Refunds	0	0	0	0	0
99.9	Total obligations	185,016	184,012	175,911	175,000	(911)

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Manufacturing USA

Line Item		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Manufacturing USA	Pos./Approp	34	$51,000 [1/]	34	$37,000	34	$37,265	34	$37,000	0	($265)
	FTE/Obl.	23	22,691	27	67,072	27	37,265	27	37,000	0	(265)

[1/] Including enacted amount of $14M from the Disaster Relief Supplemental Appropriations Act, 2023.

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
JUSTIFICATION OF PROGRAM AND PERFORMANCE
(Dollar amounts in thousands)

Activity: Manufacturing USA

Goal Statement

The primary goal of the Manufacturing USA program is to develop new manufacturing technologies for rapid scale up of U.S. discoveries. Industry and academic researchers work together to create advanced manufacturing products and processes that benefit entire industry sectors in areas of critical national needs. Another major goal is workforce training and upskilling current workers in new and advanced technology, including training veterans and disadvantaged communities for high-skill, high-paying jobs of the advanced manufacturing workforce.

Base Program

The base request provides funds for Federal investment in the Manufacturing USA program which increases U.S. global competitiveness by creating an effective public-private manufacturing research infrastructure for U.S. industry and academia to solve critical manufacturing challenges. Manufacturing USA consists of industry-led institutes with Federal funding matched by an equal or greater amount of non-Federal support over a 5 to 7-year period. Federal sponsorship may be renewed after a rigorous assessment process.

Each institute has a unique technical concentration that can benefit by improving commercial production in an entire industry sector. Industry, academia, and government partners leverage existing resources, collaborate, and co-invest to nurture manufacturing innovation and accelerate commercialization. As an anchor for sustainable manufacturing innovation hubs, the institutes create, showcase, and deploy new capabilities, new products, and new processes. They build workforce skills at all levels and enhance manufacturing capabilities in companies (large and small). Base funding allows continued support for program operations. While the institutes provide a network for stakeholders to leverage existing resources, collaborate, and co-invest, the development of commercial applications is left to the private sector, which gains the tools (manufacturing processes) to make their products.

The budget request continues program coordination and network support of Manufacturing USA institutes, which at the end of FY 2024 should stand at two institutes sponsored by the Department of Commerce, nine by the Department of Defense and seven by the Department of Energy. Critically, the budget includes funding to accelerate technology transfer and workforce skills from Manufacturing USA institutes to U.S. production, via merit-based investments in industry testbeds at Manufacturing USA institutes. These testbeds support emerging priority areas, such as manufacturing technology development, transfer of technology to manufacturers, and engagement of underserved communities in the network's technology and education and workforce development program. Note: The CHIPS and Science Act also provided one-time mandatory funds for Institutes for semiconductors and are not included as part of this base program.

Examples of Accomplishments

Program accomplishments and industry impact for the program can be found at: https://www.manufacturingusa.com/.

Additionally, Manufacturing USA will be standing up the Workforce, Education and Vibrant Ecosystem (WEAVE) Program. WEAVE is a public service award to engage with HBCUs and minority-serving institutions and to assist in transitioning institute-developed technologies out into the public, such as through testbeds and scale and other types of technologies that can really address scale up.

Statement of Operating Objectives

As part of efforts to revitalize U.S. manufacturing and ensure U.S. global leadership, NIST proposed and Congress authorized a network of manufacturing innovation institutes where researchers, companies, universities, community colleges, and entrepreneurs come together to develop new manufacturing technologies with broad applications. These institutes also train the workforce, including returning veterans, needed to address a shortage of qualified workers in advanced manufacturing industries. The primary objective is to ensure that American innovations and inventions, currently going offshore for production, would be scaled up from laboratory experiments to an industrial level in the U.S. by developing new manufacturing processes to be used by entire industry sectors. The program is designed to meet broad industry needs across sectors, with priority given to address national advanced manufacturing-related needs, such as artificial intelligence, cybersecurity, and quantum information.

Each Manufacturing USA institute has a unique technology focus with the objective of creating robust regional manufacturing hubs that have national impact. The institutes support an ecosystem of manufacturing activity in regions of the U.S., enabling redevelopment of domestic supply chains in areas of advanced technology. The Manufacturing USA institutes support manufacturing technology commercialization by helping to bridge the gap from the laboratory to the market, and address core gaps in scaling U.S. manufacturing process technologies.

Explanation and Justification

Line Item		2023 Actual		2024 Annualized CR		2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
Manufacturing USA	Pos./BA	34	$51,000	34	$37,000	34	$37,265
	FTE/Obl	23	22,691	27	67,072	27	37,265

Manufacturing USA promotes direct and broad collaboration on industry-relevant research and development to make sure that innovations developed in the U.S. are also manufactured in the U.S. rather than other countries. Institutes facilitate the adoption of new manufacturing technologies, tools, and methodologies that make U.S. manufacturers more competitive. Manufacturing USA emphasizes outreach and engagement with small- and medium-sized manufacturing enterprises. DOC's industry-driven Innovation Institutes bridge a key market failure in the U.S. innovation ecosystem, which is even more pronounced in advanced manufacturing. U.S. manufacturers individually are challenged to fund these technological development functions, and small manufacturers especially struggle with individually investing in prototyping and scale up of new technologies and products. NIST is required by Congress to convene, support, and coordinate the network of all Manufacturing USA institutes, including the existing institutes at the Department of Defense and Department of Energy. Manufacturing USA is specified in the White House *National Strategy for Advanced Manufacturing* (2022) as the means for achieving many of the key national objectives necessary for the U.S. to maintain a competitive manufacturing sector. Failure to maintain support for this initiative could lead to a loss of U.S. competitiveness in this sector as other countries are increasingly adept at technology transfer and scaling to production.

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
PROGRAM CHANGES FOR 2025
(Dollar amounts in thousands)

		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
Mfg. USA Program Reduction to	Pos/BA	34	$37,265	34	$37,000	0	($265)
Offset Inflationary Costs	FTE/Obl.	27	37,265	27	37,000	0	(265)

Manufacturing USA Program Reduction to Offset Inflationary Costs (-$265,000, 0 FTE/0 Position) – Manufacturing USA will maintain the external funding levels for existing Institutes at the FY 2024 levels. However, to offset inflationary costs in FY 2025, the program will reduce internal spending within the program's Institute coordination budget by $265 thousand.

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
PROGRAM CHANGE DETAIL BY OBJECT CLASS

(Direct Obligations amounts in thousands)

Activity: Manufacturing USA
Subactivity: Manufacturing USA

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11.1	Full-time permanent compensation	$3,280	$3,442	$3,516	$3,516	0
11.3	Other than full-time permanent	209	209	209	209	0
11.5	Other personnel compensation	103	141	178	178	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	Total personnel compensation	3,592	3,792	3,903	3,903	0
12.1	Civilian personnel benefits	1,429	1,485	1,523	1,523	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	124	124	124	124	0
22	Transportation of things	8	8	9	8	($1)
23	Rent, communications, and utilities	0	0	0	0	0
23.1	Rental payments to GSA	2	2	2	2	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and misc. charges	282	282	359	330	(29)
24	Printing and reproduction	3	3	3	3	0
25	Other contractual services	0	0	0	0	0
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services from non-Federal sources	2,332	2,075	2,102	1,877	(225)
25.3	Other goods and services from Federal sources	363	363	366	360	(6)
25.4	Operation and maintenance of facilities	0	0	0	0	0
25.5	Research and development contracts	2	2	2	2	0
25.6	Medical care	0	0	0	0	0
25.7	Operation and maintenance of equipment	147	147	151	151	0
25.8	Subsistence and support of persons	0	0	0	0	0
26	Supplies and materials	118	118	120	118	(2)
31	Equipment	83	83	85	83	(2)
32	Lands and structures	0	0	0	0	0
33	Investments and loans	0	0	0	0	0
41	Grants, subsidies and contributions	14,206	58,588	28,516	28,516	0
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
44	Refunds	0	0	0	0	0
99.9	Total obligations	22,691	67,072	37,265	37,000	(265)

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Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$14,880	$15,719	$16,120	$16,120	0
11.3	Other than full-time permanent	1,044	1,089	1,111	1,111	0
11.5	Other personnel compensation	420	483	537	537	0
11.9	**Total personnel compensation**	16,344	17,291	17,768	17,768	0
12.1	Civilian personnel benefits	6,254	6,558	6,753	6,753	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	429	429	430	427	($3)
22	Transportation of things	14	14	16	15	(1)
23.1	Rental payments to GSA	11	11	11	11	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and miscellaneous charges	1,635	1,635	1,909	1,783	(126)
24	Printing and reproduction	8	8	9	9	0
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services from non-Federal sources	9,624	9,438	9,513	8,520	(993)
25.3	Other goods and services from Federal sources	2,081	2,081	2,099	2,075	(24)
25.5	Research and development contracts	4	4	19	19	0
25.7	Operation and maintenance of equipment	512	512	516	516	0
26	Supplies and materials	673	673	698	687	(11)
31	Equipment	540	540	558	540	(18)
32	Land and structures	0	0	0	0	0
41	Grants, subsidies, and contributions	169,578	211,961	172,877	172,877	0
43	Interest and dividends	0	0	0	0	0
99	Total Obligations	207,707	251,155	213,176	212,000	(1,176)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	$207,707	$251,155	$213,176	$212,000	($1,176)
	Prior year recoveries	(862)	0		0	0
	Less prior year refunds	(4)	0	0	0	0
	Less prior year unobligated balance	(6,996)	(39,155)	0	0	0
	Plus unobligated balance end of year	39,155	0		0	0
	Anticipated recoveries	0	0	0	0	0
	Total Budget Authority/Appropriation	239,000	212,000	213,176	212,000	(1,176)

Personnel Data

Full-time equivalent employment:					
Full-time permanent	102	113	113	113	0
Other than full-time permanent	10	10	10	10	0
Total	112	123	123	123	0
Authorized Positions:					
Full-time permanent	129	129	129	129	0
Other than full-time permanent	2	2	2	2	0
Total	131	131	131	131	0

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
Activity/Subactivity/Line Item: Hollings Manufacturing Extension Partnership
SELECT ACTIVITIES BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$11,600	$12,277	$12,604	$12,604	0
11.3	Other than full-time permanent	835	880	902	902	0
11.5	Other personnel compensation	317	342	359	359	0
11.9	**Total personnel compensation**	12,752	13,499	13,865	13,865	0
12.1	Civilian personnel benefits	4,825	5,073	5,230	5,230	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	305	305	306	303	($3)
22	Transportation of things	6	6	7	7	0
23.1	Rental payments to GSA	9	9	9	9	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and miscellaneous charges	1,353	1,353	1,550	1,453	(97)
24	Printing and reproduction	5	5	6	6	0
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services from non-Federal sources	7,292	7,292	7,411	6,643	(768)
25.3	Other goods and services from Federal sources	1,718	1,718	1,733	1,715	(18)
25.5	Research and development contracts	2	2	17	17	0
25.7	Operation and maintenance of equipment	365	365	365	365	0
26	Supplies and materials	555	555	578	569	(9)
31	Equipment	457	457	473	457	(16)
32	Land and structures	0	0	0	0	0
41	Grants, subsidies, and contributions	155,372	153,373	144,361	144,361	0
43	Interest and dividends	0	0	0	0	0
99	Total Obligations	185,016	184,012	175,911	175,000	(911)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	$185,016	$184,012	$175,911	$175,000	($911)
	Less prior year recoveries	(442)	0	0	0	0
	Less prior year refunds	(4)	0	0	0	0
	Less prior year unobligated balance	(5,582)	(9,012)	0	0	0
	Plus unobligated balance end of year	9,012	0	0	0	0
	Less anticipated recoveries	0	0	0	0	0
	Total Budget Authority/Appropriation	188,000	175,000	175,911	175,000	(911)
	Personnel Data					
	Full-time equivalent employment:					
	Full-time permanent	80	87	87	87	0
	Other than full-time permanent	9	9	9	9	0
	Total	89	96	96	96	0
	Authorized Positions:					
	Full-time permanent	95	95	95	95	0
	Other than full-time permanent	2	2	2	2	0
	Total	97	97	97	97	0

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
Activity/Subactivity/Line Item: Manufacturing USA
SELECT ACTIVITIES BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$3,280	$3,442	$3,516	$3,516	0
11.3	Other than full-time permanent	209	209	209	209	0
11.5	Other personnel compensation	103	141	178	178	0
11.9	**Total personnel compensation**	3,592	3,792	3,903	3,903	0
12.1	Civilian personnel benefits	1,429	1,485	1,523	1,523	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	124	124	124	124	0
22	Transportation of things	8	8	9	8	($1)
23.1	Rental payments to GSA	2	2	2	2	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and miscellaneous charges	282	282	359	330	(29)
24	Printing and reproduction	3	3	3	3	0
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services from non-Federal sources	2,332	2,075	2,102	1,877	(225)
25.3	Other goods and services from Federal sources	363	363	366	360	(6)
25.5	Research and development contracts	2	2	2	2	0
25.7	Operation and maintenance of equipment	147	147	151	151	0
26	Supplies and materials	118	118	120	118	(2)
31	Equipment	83	83	85	83	(2)
32	Land and structures	0	0	0	0	0
41	Grants, subsidies, and contributions	14,206	58,588	28,516	28,516	0
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
99	Total Obligations	22,691	67,072	37,265	37,000	(265)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	$22,691	$67,072	$37,265	$37,000	($265)
	Less prior year recoveries	(420)	0	0	0	0
	Less prior year refunds	0	0	0	0	0
	Less prior year unobligated balance	(1,343)	(30,072)	0	0	0
	Plus unobligated balance end of year	30,072	0	0	0	0
			0			
	Total Budget Authority/Appropriation	51,000	37,000	37,265	37,000	(265)
	Offset or recoveries of prior year obligations (P.L. 115-31)	0	0	0	0	0
	Plus Unobligated Balance Rescission	0	0	0	0	0
	Total Appropriation	51,000	37,000	37,265	37,000	(265)

Personnel Data

Full-time equivalent employment:					
Full-time permanent	22	26	26	26	0
Other than full-time permanent	1	1	1	1	0
Total	23	27	27	27	0
Authorized Positions:					
Full-time permanent	34	34	34	34	0
Other than full-time permanent	0	0	0	0	0
Total	34	34	34	34	0

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
APPROPRIATION LANGUAGE AND CODE CITATIONS

1. For necessary expenses of the Industrial Technology Services appropriation of the National Institute of Standards and Technology,

15 U.S.C. 271 et seq.
15 U.S.C. 272(b)(1) and (b)(4)
15 U.S.C. 278b
15 U.S.C. 278k
15 U.S.C. 278l
15 U.S.C. 278n
15 U.S.C. 278r
15 U.S.C. 7506(a)(2)

15 U.S.C. 271 et seq. provides NIST's organic authorities.

15 U.S.C. 272(b)(1) authorizes the Secretary, through the Director of NIST, to assist industry in the development of technology and procedures needed to improve quality, to modernize manufacturing processes, to ensure product reliability, manufacturability, functionality, and cost-effectiveness, and to facilitate more rapid commercialization, especially by small- and medium-sized companies throughout the United States, of products based on new scientific discoveries in fields such as automation, electronics, advanced materials, biotechnology, and optical technologies.

15 U.S.C. 272(b)(4) authorizes the Secretary, through the Director of NIST, to enter into contracts, including cooperative research and development arrangements and grants and cooperative agreements, in furtherance of the purposes of the NIST Act.

15 U.S.C. 278b provides for a Working Capital Fund to support NIST activities.

15 U.S.C. 278k directs the Secretary, through the Director of NIST, to provide assistance for the creation of Regional Centers for the Transfer of Manufacturing Technology.

15 U.S.C. 278l provides authority for technical assistance to State technology programs.

15 U.S.C. 278n established the Advanced Technology Program within NIST to assist U.S. businesses in applying generic technology and research results to commercialize scientific discoveries and refine manufacturing technologies. Public Law 110-69 signed on August 9, 2007, has now abolished the Advanced Technology Program (ATP).

15 U.S.C. 7506(a)(2) instructs the NIST Director to utilize the Manufacturing Extension Partnership program to the extent possible to ensure that basic research on issues related to the development and manufacture of nanotechnology, including metrology; reliability and quality assurance; processes control; and manufacturing best practices reaches small- and medium-sized manufacturing companies.

2. For necessary expenses for industrial technology services, $212,000,000, to remain available until expended, of which $175,000,000 shall be for the Hollings Manufacturing Extension Partnership, and of which $37,000,000 shall be for the Manufacturing USA Program (formerly known as the National Network for Manufacturing Innovation).

3. Public Law 110-69, America Competes Act, 121 Stat 572, enacted August 9, 2007, reauthorized the Industrial Technology Services appropriation through 2010. In addition, it eliminated the Advanced Technology Program (ATP) and established the Technology Innovation Program (TIP) which provides grants to eligible companies or joint ventures whose proposed technology has strong potential to address critical national needs. It also amended 15 U.S.C. 3711 by changing the name of the National Medal of Technology from "Technology Medal" to "Technology and Innovation Medal".

4. Public Law 111-358, America Competes Reauthorization Act, 2010, 124 Stat 3982, enacted January 4, 2011, reauthorized the Industrial Technology Services appropriation through 2013 to include the Manufacturing Extension Partnership Program (MEP) and the Malcolm Baldrige National Quality Award program. In addition, authorization is provided for an Innovative Services Initiative to assist small and medium-sized manufacturers within the MEP program.

5. Public Law 112-55, Consolidated and Further Continuing Appropriations Act, 2012, 125 Stat 552, enacted November 18, 2011, did not contain funding for the Technology Innovation Program (TIP) and the Baldrige Performance Excellence Program (BPEP).

6. Public Law 113-235, Consolidated and Further Continuing Appropriations Act, 2015, 128 Stat 2130, enacted December 16, 2014 amends 15 U.S.C. 271 et seq by establishing the Network for Manufacturing Innovation Program within the Industrial Technology Services appropriation to facilitate access to capital-intensive infrastructure in order to transition innovative technologies into scalable, cost-effective, and high-performing manufacturing capabilities thereby stimulating U.S. leadership in advanced manufacturing research, innovation, and technology. As part of the program, the Secretary shall establish a network of centers for
manufacturing innovation. Funding for the program is as follows: "to the extent provided for in advance by appropriations Acts the Secretary may use not to exceed $5,000,000 for each of the fiscal years 2015 through 2024 to carry out this section from amounts appropriated to the Institute for Industrial Technical Services" and, "to the extent provided for in advance by appropriations Acts, the Secretary of Energy may transfer to the Institute not to exceed $250,000,000 for the period encompassing fiscal years 2015 through 2024 from amounts appropriated for advanced manufacturing research and development within the Energy Efficiency and Renewable Energy account for the Department of Energy."

7. Public Law 114-113, Consolidated Appropriations Act, 2016, enacted on December 18, 2015, did not contain funding for the Advanced Manufacturing Technology Consortia. The accompanying Explanatory Statement contained language which moved the program into the National Network for Manufacturing Innovation as follows: "The agreement also merges the activities of the Advanced Manufacturing Technology Consortia (AMTech) into NNMI (National Network for Manufacturing Innovation)."

8. Public Law 116-136, The Coronavirus Aid, Relief, and Economic Security Act, (CARES Act), as enacted March 27, 2020 made available funding, $60,000,000 for Industrial Technology Services, “to remain available until September 30, 2021, to prevent, prepare for, and respond to coronavirus, domestically or internationally: *Provided,* That of the amount provided under this heading in this Act, $50,000,000 shall be for the Hollings Manufacturing Extension Partnership to assist manufacturers to prevent, prepare for, and respond to coronavirus and $10,000,000 shall be for the National Network for Manufacturing Innovation (also known as “Manufacturing USA”) to prevent, prepare for, and respond to coronavirus, including to support development and manufacturing of medical counter-measures and biomedical equipment and supplies.”

9. Public Law 117-238, Consolidated Appropriations Act, 2023 made available funding to include $27,000,000 to remain available until expended, and specific to implement the Research and Development, Competition, and Innovation Act (division B of Public Law 117-167), of which $13,000,000 shall be for the Hollings Manufacturing Extension Partnership, and of which $14,000,000 shall be for the Manufacturing USA Program.

Department of Commerce
National Institute of Standards and Technology
Industrial Technology Services
ADVISORY AND ASSISTANCE SERVICES
(Obligations in thousands of dollars)

	FY 2023 Actual	FY 2024 Annualized CR	FY 2025 Estimate
Consulting Services			
Management and professional support services	0	0	0
Studies, analyses, and evaluations	0	0	0
Engineering and technical services	0	0	0
Total	0	0	0

Significant Activities

Advisory and assistance services funded by the Industrial Technology Services appropriation are used to conduct evaluations of the programmatic outcomes, service delivery efficiency, and internal infrastructure requirements of the MEP Program and Manufacturing USA Program.

Need for Advisory and Assistance Services

The need for advisory and assistance services stems from the role of NIST's extramural programs with its outside partners and small businesses to relate to the private sector, professional organizations, and the public sector. Inputs must be obtained from consultants who can bring their individual expertise to bear and help NIST in assessing its program plans to meet the needs of its customers. The alternative to utilizing these services is to make no attempt to have expertise from sources outside NIST and risk having a poorer working and professional relationship with those in the business of using the products and services offered by NIST. These services provide for economic assessment and external evaluation of NIST's extramural programs.

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations	Appro-priation
Annualized CR, 2024	156	151	$462,285	$523,964	$462,285
2025 Adjustments to Base					
Plus: Inflationary adjustments to base	0	0	3,223	3,223	3,223
2025 Base	156	151	465,508	465,508	465,508
Plus: 2025 Program changes	(4)	(3)	(154,008)	(154,008)	(154,008)
2025 Estimate	152	148	311,500	311,500	311,500

Comparison by activity/subactivity with totals by activity		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Construction and Major Renovations											
Construction and Major	Pos/Approp	156	$462,285	156	$462,285	156	$465,508	152	$311,500	(4)	($154,008)
Renovations	FTE/Obl.	142	596,639	151	523,964	151	465,508	148	311,500	(3)	(154,008)
Adjustments for											
Recoveries			(2,059)		0		0		0		0
Refunds			0		0		0		0		0
Unobligated balance, start of year			(193,974)		(61,679)		0		0		0
Unobligated balance, end of year			61,679		0		0		0		0
Financing from transfers:											
Transfers to other accounts (+)			0		0		0		0		0
Budget Authority/Appropriation			462,285		462,285		465,508		311,500		(154,008)

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
PROGRAM AND PERFORMANCE: REIMBURSABLE OBLIGATIONS
(Dollar amounts in thousands)

Comparison by activity/subactivity		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Construction and Major Renovations											
Safety, Capacity, Maintenance and	Pos/Approp	0	0	0	0	0	0	0	0	0	0
Major Repairs	FTE/Obl.	0	$932	0	$1,123	0	0	0	0	0	0

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
SUMMARY OF FINANCING
(Dollar amounts in thousands)

	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
Total Obligations	$597,571	$523,964	$465,508	$311,500	($154,008)
Offsetting collections from:					
Non-Federal sources	(1,123)	0	0	0	0
Total offsetting collections	(1,123)	0	0	0	0
Recoveries (Direct)	(2,059)	0	0	0	0
Prior year recoveries (Reimbursable)	0	0	0	0	0
Refunds (Direct)	0	0	0	0	0
Unobligated balance, start of year (Direct)	(193,974)	(61,679)	0	0	0
Unobligated balance, start of year (Reimbursable)	(932)	0	0	0	0
Unobligated balance, end of year (Direct)	61,679	0	0	0	0
Unobligated balance, end of year (Reimbursable)	1,123	0	0	0	0
Budget Authority/Appropriation	462,285	462,285	465,508	311,500	(154,008)

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Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
ADJUSTMENTS TO BASE
(Dollar amounts in thousands)

	Perm. Pos.	FTE	Amount
Transfer	...	...	0
Adjustment	...	...	0
Financing	...	...	0
Other Changes:			
FY 2024 pay raise	...	...	$171
FY 2025 pay raise	...	...	336
Change in compensable days	...	...	0
Annualization of positions financed in FY 2023	0	0	
Awards	...	...	127
Personnel benefits:			
Civil Service Retirement System (CSRS)	...	...	(6)
Federal Employees' Retirement System (FERS)	...	...	(5)
Thrift Savings Plan (TSP)	...	...	(13)
Federal Insurance Contribution Act (FICA) - OASDI	...	...	30
Health insurance	...	...	36
Employees' Compensation Fund	...	...	0
Travel and transportation of persons:			
Mileage	...	...	0
Per Diem	...	...	1
Rental Payments to GSA including FIT costs	...	...	0
Communications, utilities, and miscellaneous charges:			
HCHB Electricity	...	...	0
HCHB Water/Sewer	...	...	0
Electricity rate	...	...	52
Natural gas rate	...	...	107
Other services:			
Working Capital Fund Departmental Management	...	...	0
Cybersecurity (Non-Add in WCF)			[0]
NARA storage costs	...	...	0
General pricing level adjustment	...	...	2,387
Subtotal, Other Changes	0	0	3,223
Total, Adjustments to base	0	0	3,223

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: Construction and Major Renovations

Line Item		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Construction and Major Renovations	Pos/Approp	0	0	0	0	0	0	0	$178,277	0	$178,277
	FTE/Obl.	0	0	0	0	0	0	0	178,277	0	178,277
Safety, Capacity, Maintenance and Major Repairs	Pos/Approp	152	$130,000	152	$130,000	152	$133,223	152	133,223	0	0
	FTE/Obl.	141	143,098	148	186,511	148	133,223	148	133,223	0	0
External Projects	Pos/Approp	4	332,285	4	332,285	4	332,285	0	0	(4)	(332,285)
	FTE/Obl.	1	453,541	3	337,453	3	332,285	0	0	(3)	(332,285)
Total	Pos/Approp	156	462,285	156	462,285	156	465,508	152	311,500	(4)	(154,008)
	FTE/Obl.	142	596,639	151	523,964	151	465,508	148	311,500	(3)	(154,008)

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
PROGRAM AND PERFORMANCE: REIMBURSABLE OBLIGATIONS
(Dollar amounts in thousands)

Activity: Construction and Major Renovations

Comparison by activity/subactivity		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Construction and Major Renovations	Pos/Approp	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	0	0	0	0	0	0	0	0	0
Safety, Capacity, Maintenance and Major Repairs	Pos/Approp	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	$932	0	$1,123	0	0	0	0	0	0
External Projects	Pos/Approp	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	0	0	0	0	0	0	0	0	0
Total	Pos/Approp	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	932	0	1,123	0	0	0	0	0	0

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
JUSTIFICATION OF PROGRAM AND PERFORMANCE
(Dollar amounts in thousands)

Goal Statement

The goal of Construction of Research Facilities (CRF) funding is to provide the facilities and infrastructure that enable scientists and researchers to fulfill NIST's mission – "To promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life."

Base Program

The CRF appropriation funds construction activities, including maintenance, repairs, improvements, and major renovations of facilities occupied or used by NIST in Gaithersburg, Maryland; Boulder and Fort Collins, Colorado; and Kaua'i, Hawai'i with the intent to meet current and future advancements in measurement science, standards, and critical emerging technologies to promote innovation and industrial competitiveness for the Nation. The CRF appropriation is made up of two subcomponents: Construction and Major Renovations (CMR) and Safety, Capacity, Maintenance and Major Repairs (SCMMR).

CMR is utilized for renewal of existing facilities and construction of significant new real property assets. These are projects that exceed a single award amount greater than $40 million or an addition/option to an existing CMR project for a less awarded amount, where the scope and costs are sufficient in size that such projects may be identified as an individual budget line item. The clear separation between CMR and SCMMR is that CMR is for major new construction or renovation projects, whereas SCMMR is intended to address existing buildings and building systems to maintain the facilities for the purpose constructed as well as minor new construction and renovation projects.

SCMMR funding is to support construction, sustainment, restoration, maintenance (preventative and corrective), modernization, alteration, and repairs of new and existing facilities and campus wide/building utility equipment systems upgrades, grounds, and site projects across NIST campuses to the extent of funding that is appropriated, and individual award values generally do not exceed $40 million.

The base request of $133.2 million for Safety, Capacity, Maintenance and Major Repairs (SCMMR) would allow for addressing NIST's most pressing utility infrastructure, safety and structural deficiencies. Components of this would include:

- $13 million for FY 2024 projects currently suspended until FY 2025,
- $4 million for roof top safety rails to address the top safety risk for fall hazards,
- $30 million for phase 1 of the multi-phase Renovation and Expansion of the Gaithersburg Central Utility Plant (CUP),
- Potential funding of Phase 1 of the complete replacement of the Gaithersburg underground utility infrastructure system with a potential cost of $700 million – $900 million. If funding is not available in FY 2025, Phase 1 will be awarded in FY 2026.
- And additional projects as funding allows to address NIST's over $1.1 billion FY 2023 deferred maintenance backlog.

Statement of Operating Objectives

In the 1950s and 1960s, the U.S. government recognized the need to invest in science and technology and built state-of-the-art scientific facilities to support the research mission of NIST (then the National Bureau of Standards [NBS], breaking ground at NBS's Boulder site in 1951 and at the NBS's new main site in Gaithersburg in 1961. Well over half a century later, both sites' aging and deteriorating buildings and infrastructure threaten NIST's ability to fulfill its mission. NIST's Visiting Committee on Advanced Technologies has been noting increasing impacts to NIST's mission due to facility conditions evolving their annual comments to Congress as "alarming" and "critical" in 2002 to "crumbling" facilities that prevent NIST from conducting current state-of-the art science.[2] Further, "NIST's poor and worsening facility situation will continue to prevent its world-class scientists from realizing NIST's full potential, to the detriment of the nation's security and economic competitiveness."[2] Additionally, even if buildings were operating as if new in the 1950s and 1960s, they would not have the environmental controls or utility capacities necessary for cutting edge 21st century research nor be current with today's code requirements. While the construction of new facilities and major renovation of existing facilities in recent years have made some improvements in the overall facility conditions at each site, the current overall state of facilities and infrastructure continues to be a serious impediment to NIST's ability to conduct advanced measurement science and research. This is primarily due to decades of insufficient funding for both maintenance and renewal purposes. "When the Gaithersburg and Boulder campuses are considered together, 63 percent of the research facilities and 69 percent of the non-research facilities fail to meet the DOC established FCI/CI standard for acceptable building condition."[2]

An external report[2] summarizing existing facilities at NIST and their current challenges concluded:

> Overall, the committee observed adverse, and in some cases ruinous, impacts on NIST mission execution that are a consequence of outmoded or dilapidated NIST facilities. These include:
>
> - Substantive delays in key national security deliverables due to inadequate facility performance;
> - Substantive delays in national technology priorities—such as quantum science, engineering biology, and advanced manufacturing—due to inadequate facility performance or facility failures;
> - Inability to advance research related to national technology priorities due to limitations imposed by inadequate facilities performance;
> - Material delays in NIST measurement service provision to U.S. industry customers due to inadequate facility performance or facility failures; and
> - Serious damage, or complete destruction, of highly specialized and costly equipment due to periodic catastrophic facility failures.
> - Substantial erosion of technical staff productivity—estimated as high as 40 percent by the NIST research staff interviewed by the committee during laboratory visits. NIST research staff attributed this erosion as due to rework, repair, and workarounds by researchers resulting from consistent facility underperformance or regular facility failures.[2]

[2] National Academies of Sciences, Engineering, and Medicine. 2023. Technical Assessment of the Capital Facility Needs of the National Institute of Standards and Technology. Washington, D.C., National Academies Press

Additionally, the report notes “Sustaining talent and professional metrology expertise is a strategical imperative to NIST. Yet NIST OFPM estimates that 86 percent of the technical staff (ZP and ZT and technical associates) are working in laboratory facilities that are in poor or critical condition.”[2]

The referenced report goes on to provide 17 specific mission impact examples as well as outlining numerous significant impacts to research staff that lead to recruitment and retention issues on top of work inefficiencies. Although NIST has made “Infrastructure for a 21st Century Research Institute” one of its four strategic goals, the condition of deteriorating facilities has been listed as the #1 enterprise risk to NIST’s mission success each year since rankings started in 2017. The lack of investments for long range capabilities in the U.S. puts NIST at a distinct disadvantage when it comes to maintaining American competitiveness. Other countries have similar goals of using world class infrastructure to achieve their strategic goals and have invested substantially in their research infrastructure. For example, China has poured massive resources into science and technology, similar to the large-scale post-World War 2 investment in the U.S. China has built the equivalent of 5 NISTs in the last 10 years and aims to use this investment to innovate its way past its competitors and become the world’s leader in the fields of metrology and standards. Additionally, the USA is losing pace in the technological competition with China in scientific and research breakthroughs and talent retention. China has built the foundations to position itself as the world’s leading science and technology superpower and leads the USA in 37 of 44 critical technology fields that are foundational for our economy, national security, energy production, health, and climate security.[3]

NIST regularly evaluates the impact of its R&D programs. NIST conducted 16 independent economic analyses of NIST’s work that calculated a benefit to cost ratio (BCR). The lowest BCR was 4 and the highest BCR was 249. The report[2] of the external experts continues: “Assuming the median 9:1 return on investment, the 2022 appropriation of $812 million for NIST’s laboratory programs represents a benefit-to-cost yield of over $7.3 billion to the U.S. economy and citizens.” NIST’s ability to maintain this high benefit to cost ratio is jeopardized by its aging and degrading facilities, which threatens our ability to compete effectively for talent and with other nations. The report[2] of the external experts continues: “Moreover, the long-standing facilities problems have created a culture of workarounds by scientific staff that distracts from research and development efforts.”

To address a systemic issue with deficient funding the external experts asked the question “if NIST is doing great work in substandard facilities, why is this a pressing problem?”[2] to which the conclusion was “NIST researchers have only continued to deliver world-class research by dint of heroic dedication, often fighting the poor condition and lacking functionality of their own facilities to do their jobs. As good as things may seem now, NIST could be producing at a much higher level and, if the stunning decline in the quality of its facilities is not reversed, NIST will stop being able to deliver world-class research. In short, any current appearance of great work being produced in substandard facilities is an illusion that will soon collapse absent corrective action.”[2]

NIST’s Office of Facilities and Property Management (OFPM) has developed a Draft Coordinated Recovery Plan for coordinating CMR and SCMMR work over a 20-year period that uses a two-pronged approach of sustained elevated funding for both CMR and SCMMR funding to ensure that both recapitalization (CMR) and maintenance, sustainment, and restoration (stabilization) of existing facilities (SCMMR) work in tandem to improve NIST’s poor facility conditions.

[3] ASPI’s Critical Technology Tracker Policy Brief Report No. 69/2023

The Coordinated Recovery Plan comprises the following elements:

1.) Recapitalization (CMR) sustained annual funding of $300 million to $400 million.
2.) Stabilization (SCMMR) sustained annual funding of $120 million to $150 million.

Note: These values are in FY 2022 dollars; inflationary adjustments are needed annually moving forward.

External expert reviews[2] of this plan stated: "**Recommendation 5-1:** OFPM has a sound Draft Recovery Sub-Plan for Recapitalization (CMR-funded) and should seek funding of $300–$400 million annually for at least 12 years to enable NIST to restore lost mission capabilities and provide facilities for new NIST programs" with the caveat "The committee also concludes that the proposed funding for the OFPM Draft Recovery Sub-Plan for Stabilization (SCMMR-funded) may be seriously understated but could begin achieving its purpose with an initial SCMMR fiscal year (FY) 2023 investment of $150 million (2022 dollars)."

A CRF funding level of $465,263,000 in FY 2025 would allow funding initial work on this Coordinated Recovery Plan.

Initiating recapitalization efforts would concur with external expert reviewers' "**Recommendation 3-1:** NIST should modernize laboratory facilities to provide the performance needed to meet the measurement science and mission-focused research and development challenges for today and the future, and to attract and retain the scientists and engineers required to solve these challenges. Current conditions and functionality are adversely impacting NIST's current mission and modernization is well overdue and desperately needed."[2] This would also satisfy their finding that:

> Most of the older laboratories that have not been renovated fail to provide the functionality needed by world-class scientists on vital assignments of national consequence. The committee concluded that these deficient functionalities of NIST's facilities constitute a major threat to its mission performance and thereby, to our nation's economy, national security, and quality of life. The following is a list of observed issues:
>
> - Substantive delays in key national security deliverables due to inadequate facility performance.
> - Substantive delays in national technology priorities such as quantum science, engineering, biology, advanced manufacturing, and core measurement sciences research.
> - Inability to advance research related to national technology priorities.
> - Material delays in NIST measurement service provisions to U.S. industry customers.
> - Serious damage or complete destruction of highly specialized and costly equipment, concomitant with erosion of technical staff productivity.
>
> Efficiency losses reported to the committee from staff ranged from 10 to 40 percent, with typical reported values of 20 percent.[2]

Projects NIST plans to accomplish with FY 2024 funding include:

- Replacement of the overhead crane system in Building 304 (safety)
- Life-Safety Improvements to Building 1 (safety)

- Roof rail installations at both Boulder and Gaithersburg campuses (phase 1 of 2) (safety)
- Replace 2 roofs and develop contract vehicle for replacement of over 10 roofs in future years
- CUP Chiller replacements in Boulder (phase 1 of 2) as well as cooling tower upgrades
- Multiple utility and building automation control system upgrades impacting semiconductor chip research facilities
- Design for replacement fire alarm panels and fire alarm system components in four buildings (safety)
- Utility upgrades to failing components at multiple laboratory buildings
- Electrical safety upgrades at both Boulder and Gaithersburg campuses (safety)
- Building 301 HVAC system replacements, electrical and life-safety upgrades (safety)
- Additional miscellaneous projects focused on addressing the most highly scored projects from the FY 2023 deferred maintenance backlog.

Projects carried into FY 2024 from previous years:

- Building 101 tower AHU Replacements ($9 million): Replacement of air handling units serving floors 2 through 12 in Building 101 in Gaithersburg, MD.
- Building 101 Vertical Marble Repairs ($2 million): Replacement of deteriorating structural supports for marble façade. This is phase 1 of 3.
- New Robotics Building 209 Electrical Feeder ($2 million): Provide new electrical feed to building due to lack of funding to complete Building 245 Modernization.

Roof Safety Rails: In response to a fatality at NIST in Autumn 2022 due to a fall hazard, roof edge safety rails were mandated for all NIST facilities which previously had very few. This effort is being funded between FY 2024 and FY 2025.

Gaithersburg Central Utility Plant (CUP): The campus CUP was designed for a 50 year operating life and is currently over 60 years old. A catastrophic failure in 2018 indicated less than 10 years of life left in existing steam piping before potential system failure. Additionally, major components are failing at an accelerating rate. In 2022 the Gaithersburg campus was without environmental controls for several weeks due to various failures. In addition, 40% reduced cooling during July and August due to failed major components resulted in numerous laboratories and offices reaching temperatures over 90 degrees Fahrenheit. This project will be funded over 3 years to 5 years depending on final cost estimates.

Underground Utility Infrastructure Replacement Program: The campus underground utility infrastructure was installed in the late 1950s thru 1962 and is over 60 years old, 10 years older than the designed life of 50 years. This includes nearly 50 miles of utilities that are deep underground and are failing at an accelerating rate. This results in both loss of utilities to laboratories while waiting for repairs as well as environmental contamination of the local water supply. This program will not only replace the entire infrastructure but increase capacity for future expansions as well as install connection points for future planned projects in the campus master plan to reduce future costs. The system is also being designed to reduce future costs for maintenance and operational costs.

Explanation and Justification

Line Item		2023 Actual		2024 Annualized CR		2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
Construction and Major Renovations	Pos./BA	0	0	0	0	0	0
	FTE/Obl	0	0	0	$874	0	0
Safety, Capacity, Maintenance and Major Repairs	Pos./BA	152	$130,000	152	130,000	152	$133,223
	FTE/Obl	141	143,098	148	186,511	148	133,223
External Projects	Pos./BA	4	332,285	4	332,285	4	332,285
	FTE/Obl	1	453,541	3	337,453	3	332,285
Total	Pos./BA	156	462,285	156	462,285	156	465,508
	FTE/Obl	142	596,639	151	523,964	151	465,508

Construction of Research Facilities (Total Funding: $465,508 million and 156 Positions)

Prior CMR funding has allowed the award of Wings 4 and 5 in Building 1 in Boulder, CO, for complete renovation as well as a large portion of Building 245 in Gaithersburg, MD, to include two building additions. NIST is continually directed by Congress to expand its research efforts in the industries of the future and to strengthen U.S. standards leadership. That, coupled with NIST's role in technology transfer to advance the U.S. economy, requires facilities that enable the work required to meet these mandates and expectations from our external stakeholders and thus needs the appropriate level of funding to do so.

NIST did not receive any funding in FY 2022 from the Bipartisan Infrastructure Law. NIST currently has roughly $2.5B in "shovel ready" projects to initiate procurement should funding be provided. Projects included in this effort include prioritized projects outlined in the implementation plan as well as others in the plan report. This work is a large portion of work outlined in the NIST draft Coordinated Recovery Plan.

NIST's rapidly deteriorating facility conditions are creating more urgent needs to address major safety and mission impact items across both campuses. NIST has prioritized the deferred maintenance list as well as prioritizing projects that have the highest mission impact scores or highest safety impact scores or both. Based on this scoring, NIST has identified a 5 year high priority program (FY 2025 – FY 2029) that is only partially addressed within the FY 2025 funding:

- Utility Infrastructure: $1,050 million – $1,250 million (may go up with final estimates for Gaithersburg CUP and underground utilities)
- Roofs/Life-Safety/Safety: $75 million – $100 million
- Building 101 Complex: $5 million – $10 million
- Misc.: $105 million – $ 115 million
- Boulder area wildfire mitigation funding is not included in the values above.

On the stabilization front (SCMMR) this funding would address NIST's most pressing utility infrastructure, safety and structural deficiencies. Components of this would include funding for the following:

- Annual recurring expenses (labor, recurring contracts, other objects costs),
- Building 3 Addition (allows mothballing Building 24 in Boulder),
- Initial work for the Gaithersburg campus underground utility infrastructure replacement program,
- Continuing the one-time upgrade of antiquated IT infrastructure,
- Replacement of major electrical gear in Gaithersburg,
- Initiating ADA and safety related projects, and
- Additional projects as funding allows to address NIST's roughly $1 billion FY 2023 deferred maintenance backlog.

This approach to stabilization will also address the external experts' findings on the need to address this category of work in conjunction with recapitalization (modernization) requirements in "**Recommendation 3-2:** NIST should address the underlying deficiencies with campus infrastructure including the CUPs, distribution systems, and electrical power quality and continuity to ensure that the modernization plan investment is effective. If not developed in conjunction with laboratory modernization, the requirements of the new laboratories will continue to not be met."[2]

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
PROGRAM CHANGES FOR 2025
(Dollar amounts in thousands)

		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
Construction and Major Renovations	Pos/BA	0	0	0	$178,277	0	$178,277
	FTE/Obl.	0	0	0	178,277	0	178,277

Construction and Major Renovations (CMR) - Completion of Building 245 Modernization Project ($178,277, 0 FTE/0 Positions) – NIST requests an increase of $178.277 million to complete the ongoing Building 245 Modernization Project within the CMR portfolio. This request includes funding to address significant cost increases due to rising construction prices, supply chain bottlenecks, as well as unexpected radiation and asbestos contamination.

Building 245 was built in 1964 and is a highly specialized facility for radiation physics measurements and research. It is the primary facility where NIST develops, maintains, and disseminates the measurement standards and calibrations for electromagnetic radiation and radioactivity used by government and private industry throughout the U.S. and the world.

The state of NIST's facilities has become a critical problem that is harming NIST's ability to deliver on its mission. Some projects are on hold due to utility failures that destroy high-precision laboratory equipment or render the use of that equipment unfeasible. Constant flooding, electrical hazards, and poor air quality contribute to a significant increase in safety risks for staff, causing significant reductions in research capabilities and efficiency. Delays in project funding will further delay NIST's ability to provide critical measurements and services and make hiring qualified staff extremely difficult, impacting NIST's future capabilities in these areas. If not funded, NIST will remain unable to provide standards and calibration services for electromagnetic radiation and radioactivity to customers. The closure of facilities risks NIST's obligation to the International Committee for Weights and Measures to assure the equivalence of measurements worldwide. NIST researchers waste 10%-40% of their time recalibrating, cleaning, or performing other maintenance due to facilities deficiencies. External customers/stakeholders experience increased time and cost of radiation calibration services as a result of the degraded facilities at NIST. Properly functioning facilities funded by this increase significantly enhance the capacity of NIST researchers to perform critical measurements and calibrations.

Calibration services of the Gamma-ray Radiation Calibration facility discontinued due to facility degradation will be resumed in the updated facilities. These halted calibrations provide traceability for radiation protection and homeland security applications nationwide. By providing these services, NIST helps to ensure not only the safety and security of these radiation workers but also of the public.

Structural upgrades to the remaining 40% of the original building enable additional large-scale radioactive sources to be calibrated. Previously appropriated funding allowed the completion of an H-Wing addition as well as modernization of the C-Wing and additional building utility infrastructure. With this increase for 2025, NIST will complete upgrades for all Building 245 underground laboratories, including associated utility infrastructure and life safety systems, as well as the B-Wing above ground. Exterior site work and demobilization for the project are also included.

	2025	2026	2027	2028	2029
	Impact of the program change is described in the narrative above				
Outyear Costs:					
Direct Obligations	178,277	0	0	0	0
Uncapitalized	0	0	0	0	0
Budget Authority	178,277	0	0	0	0
Outlays	35,655	53,483	53,483	26,742	8,914
FTE	0	0	0	0	0
Positions	0	0	0	0	0

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
PROGRAM CHANGE DETAIL BY OBJECT CLASS

(Direct Obligations amounts in thousands)

Activity: Construction and Major Renovations

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11.1	Full-time permanent compensation	$17,450	$17,816	$18,182	$18,182	0
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	1,006	1,139	1,272	1,272	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	Total personnel compensation	18,456	18,955	19,454	19,454	0
12.1	Civilian personnel benefits	6,457	6,635	6,813	6,813	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	94	194	195	195	0
22	Transportation of things	8	34	35	35	0
23	Rent, communications, and utilities					
23.1	Rental payments to GSA	0	0	0	0	0
23.2	Rental payments to others	1	1	1	1	0
23.3	Communications, utilities, and misc. charges	669	834	999	999	0
24	Printing and reproduction	13	14	15	15	0
25	Other contractual services					
25.1	Advisory and assistance services	2	2	11	11	0
25.2	Other services from non-Federal sources	75,574	121,770	66,580	66,580	0
25.3	Other goods and services from Federal sources	15,311	15,339	15,367	15,367	0
25.4	Operation and maintenance of facilities	0	0	0	0	0
25.5	Research and development contracts	0	0	0	0	0
25.6	Medical care	0	0	0	0	0
25.7	Operation and maintenance of equipment	2,464	2,544	2,624	2,624	0
25.8	Subsistence and support of persons	0	0	0	0	0
26	Supplies and materials	2,904	2,961	3,018	3,018	0
31	Equipment	340	349	358	358	0
32	Lands and structures	21,076	21,076	21,076	199,353	$178,277
33	Investments and loans	0	0	0	0	0
41	Grants, subsidies and contributions	453,270	333,256	328,962	328,962	0
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
44	Refunds	0	0	0	0	0
99.9	Total obligations	596,639	523,964	465,508	643,785	178,277

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
PROGRAM CHANGES FOR 2025
(Dollar amounts in thousands)

		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
External Projects	Pos/BA	4	$332,285	0	0	(4)	($332,285)
	FTE/Obl.	3	332,285	0	0	(3)	(332,285)

Removal of One-time Congressional External Community Projects (-$332,285, -3 FTE/-4 Position) - This program change removes funding for one-time congressionally directed projects provided in the FY 2023 enacted bill.

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
PROGRAM CHANGE PERSONNEL DETAIL

Activity: Construction and Major Renovations
Program Change: External Projects

Full-time permanent Title		Grade	Number	Annual Salary	Total Salaries
Contract Specialist		ZP III	(2)	($99,097)	($198,194)
Construction Grants Specialist		ZP IV	(2)	(139,251)	(278,502)
Subtotal			(4)		(476,696)
Less lapse	25 %		1		119,174
Total full-time permanent (FTE)			(3)		(357,522)
2025 Pay Adjustment (2.0%)					(7,150)
Total					(364,672)

Personnel Data	
Full-Time Equivalent Employment:	
Full-time permanent	(3)
Authorized Positions:	
Full-time permanent	(4)

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
PROGRAM CHANGE DETAIL BY OBJECT CLASS

(Direct Obligations amounts in thousands)

Activity: Construction and Major Renovations

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11.1	Full-time permanent compensation	$17,450	$17,816	$18,182	$17,817	($365)
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	1,006	1,139	1,272	1,272	0
11.8	Special personnel services payments	0	0	0	0	0
11.9	Total personnel compensation	18,456	18,955	19,454	19,089	(365)
12.1	Civilian personnel benefits	6,457	6,635	6,813	6,696	(117)
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	94	194	195	96	(99)
22	Transportation of things	8	34	35	10	(25)
23	Rent, communications, and utilities					
23.1	Rental payments to GSA	0	0	0	0	0
23.2	Rental payments to others	1	1	1	1	0
23.3	Communications, utilities, and misc. charges	669	834	999	999	0
24	Printing and reproduction	13	14	15	3	(12)
25	Other contractual services					
25.1	Advisory and assistance services	2	2	11	11	0
25.2	Other services from non-Federal sources	75,574	121,770	66,580	64,295	(2,285)
25.3	Other goods and services from Federal sources	15,311	15,339	15,367	14,992	(375)
25.4	Operation and maintenance of facilities	0	0	0	0	0
25.5	Research and development contracts	0	0	0	0	0
25.6	Medical care	0	0	0	0	0
25.7	Operation and maintenance of equipment	2,464	2,544	2,624	2,599	(25)
25.8	Subsistence and support of persons	0	0	0	0	0
26	Supplies and materials	2,904	2,961	3,018	2,998	(20)
31	Equipment	340	349	358	358	0
32	Lands and structures	21,076	21,076	21,076	21,076	0
33	Investments and loans	0	0	0	0	0
41	Grants, subsidies and contributions	453,270	333,256	328,962	0	(328,962)
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
44	Refunds	0	0	0	0	0
99.9	Total obligations	596,639	523,964	465,508	133,223	(332,285)

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$17,450	$17,816	$18,182	$17,817	($365)
11.3	Other than full-time permanent	0	0	0	0	0
11.5	Other personnel compensation	1,006	1,139	1,272	1,272	0
11.9	**Total personnel compensation**	18,456	18,955	19,454	19,089	(365)
12.1	Civilian personnel benefits	6,457	6,635	6,813	6,696	(117)
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	94	194	195	96	(99)
22	Transportation of things	8	34	35	10	(25)
23.1	Rental payments to GSA	0	0	0	0	0
23.2	Rental payments to others	1	1	1	1	0
23.3	Communications, utilities, and miscellaneous charges	669	834	999	999	0
24	Printing and reproduction	13	14	15	3	(12)
25.1	Advisory and assistance services	2	2	11	11	0
25.2	Other services from non-Federal sources	75,574	121,770	66,580	64,295	(2,285)
25.3	Other goods and services from Federal sources	15,311	15,339	15,367	14,992	(375)
25.5	Research and development contracts	0	0	0	0	0
25.7	Operation and maintenance of equipment	2,464	2,544	2,624	2,599	(25)
26	Supplies and materials	2,904	2,961	3,018	2,998	(20)
31	Equipment	340	349	358	358	0
32	Land and structures	21,076	21,076	21,076	199,353	178,277
41	Grants, subsidies, and contributions	453,270	333,256	328,962	0	(328,962)
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
99	Total Obligations	596,639	523,964	465,508	311,500	(154,008)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	$596,639	$523,964	$465,508	$311,500	($154,008)
	Less prior year recoveries	(2,059)	0	0	0	0
	Less prior year refunds	0	0	0	0	0
	Less prior year unobligated balance	(193,974)	(61,679)	0	0	0
	Plus unobligated balance end of year	61,679	0	0	0	0
	Total Budget Authority/Appropriation	462,285	462,285	465,508	311,500	(154,008)
	Plus Transfers from Other Accounts	0	0	0	0	0
	Appropriation	462,285	462,285	465,508	311,500	(154,008)

Personnel Data

Full-time equivalent employment:					
Full-time permanent	142	151	151	148	(3)
Other than full-time permanent	0	0	0	0	0
Total	142	151	151	148	(3)
Authorized Positions:					
Full-time permanent	156	156	156	152	(4)
Other than full-time permanent	0	0	0	0	0
Total	156	156	156	152	(4)

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
APPROPRIATION LANGUAGE AND CODE CITATIONS

1. For construction of new research facilities, including architectural and engineering design, and for renovation and maintenance of existing facilities, not otherwise provided for the National Institute of Standards and Technology, as authorized by 15 U.S.C. 278c-278e.

   15 U.S.C. 278c authorizes that the Secretary of Commerce to acquire land for such field sites as are necessary for the proper and efficient conduct of the activities authorized.

   15 U.S.C. 278d authorizes that the Secretary of Commerce to undertake such construction of buildings and other facilities and to make such improvements to existing buildings, grounds, and other facilities as are necessary for the proper and efficient conduct of authorized activities.

   15 U.S.C. 278e provides that in the performance of the functions of the National Institute of Standards and Technology the Secretary of Commerce is authorized to undertake: the care, maintenance, protection, repair, and alteration of Institute buildings and other plant facilities, equipment, and property.

2. $311,500,000 to remain available until expended.

3. Public Law 110-69, America Competes Act, 121 Stat 572, passed August 9, 2007, reauthorizes the Construction of Research Facilities appropriation through 2010. It also provided for the Retention of Fees to the Construction of Research Facilities account. “The Director is authorized to retain all building use and depreciation surcharge fees collected pursuant to OMB Circular A-25. Such fees shall be collected and credited to the Construction of Research Facilities Appropriation Account for use in maintenance and repair of the Institute's existing facilities”. Public Law 111-358, America Competes Reauthorization Act, 2010, 124 Stat 3982, passed January 4, 2011, reauthorized the Construction of Research Facilities appropriation through 2013.

Department of Commerce
National Institute of Standards and Technology
Construction of Research Facilities
ADVISORY AND ASSISTANCE SERVICES
(Obligations in thousands of dollars)

	FY 2023 Actual	FY 2024 Annualized CR	FY 2025 Estimate
Consulting Services			
Management and professional support services	$2	$2	$2
Studies, analyses, and evaluations	0	0	0
Engineering and technical services	0	0	9
Total	2	2	11

Significant Activities

Advisory and assistance services funded by the Construction of Research Facilities appropriation includes assisting the development of program requirements for addition, replacement, and consolidation of existing facilities and structures, services for interior and exterior signage standards, and conceptual design for new facilities.

Need for Advisory and Assistance Services

NIST uses outside professional support and engineering and technical services whenever necessary expertise is not available in-house to ensure the safety of NIST staff and visitors. These services provide for Construction of Research Facilities mainly relate to building construction architectural systems, facilities capital planning, and safety.

Department of Commerce
National Institute of Standards and Technology
Working Capital Fund
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
Estimate, 2024	640	640	0	0
Adjustment in transfers from prior STRS program changes	0	0	0	0
2025 Base	640	640	0	0
Transfer from STRS program changes for equipment investments	0	0	0	0
2025 Estimate	640	640	0	0

Department of Commerce
National Institute of Standards and Technology
Working Capital Fund
SUMMARY OF REIMBURSABLE OBLIGATIONS
(Dollar amounts in thousands)

Comparison by activity/subactivity	2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
	FTE	Amount	FTE	Amount	FTE	Amount	FTE	Amount	FTE	Amount
Laboratory Programs										
WCF transfer		0		0		0		0		0
Reimbursables	546	$144,129	595	$147,104	597	$148,244	597	$148,244	0	0
WCF investments	0	9,387	0	11,344	0	0	0	0	0	0
Subtotal	546	153,516	595	158,448	597	148,244	597	148,244	0	0
Corporate Services										
WCF transfer		0		0		0		0		0
Reimbursables	11	4,298	15	4,708	15	4,849	15	4,849	0	0
WCF investments	0	(60) [2/]	0	(75) [2/]	0	0	0	0	0	0
Subtotal	11	4,238	15	4,633	15	4,849	15	4,849	0	0
Standards Coordination and Special Programs [1/]										
WCF transfer		0		0		0		0		0
Reimbursables	23	8,994	28	9,682	28	10,077	28	10,077	0	0
WCF investments	0	(156) [2/]	0	(36) [2/]	0	0	0	0	0	0
Subtotal	23	8,838	28	9,646	28	10,077	28	10,077	0	0
Manufacturing USA										
WCF transfer		0		0		0		0		0
Reimbursables	0	0	0	0	0	0	0	0	0	0
WCF investments	0	(18) [2/]	0	(21) [2/]	0	0	0	0	0	0
Subtotal	0	(18)	0	(21)	0	0	0	0	0	0
Hollings Manufacturing Extension Partnership										
WCF transfer		0		0		0		0		0
Reimbursables	0	18	2	1,600	0	0	0	0	0	0
WCF investments	0	(86) [2/]	0	(4) [2/]	0	0	0	0	0	0
Subtotal	0	(68)	2	1,596	0	0	0	0	0	0

	2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
	FTE	Amount	FTE	Amount	FTE	Amount	FTE	Amount	FTE	Amount
Total, NIST Reimbursable Services										
WCF transfer	0	0	0	0	0	0	0	0	0	0
Reimbursables	580	$157,439	640	$163,094	640	$163,170	640	$163,170	0	0
WCF investments	0	9,067	0	11,208	0	0	0	0	0	0
Grand Total	580	166,506	640	174,302	640	163,170	640	163,170	0	0

[1/] Includes Baldrige Performance Excellence Program (BPEP).

[2/] Repayment of loan principal for past invested equipment over current year's investment, resulting a net negative amount.

Department of Commerce
National Institute of Standards and Technology
Working Capital Fund
SUMMARY OF FINANCING
(Dollar amounts in thousands)

	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
Total Obligations	$166,506	$174,302	$163,170	$163,170	0
Offsetting collections from:					
Federal funds	(78,244)	(103,609)	(102,547)	(102,547)	0
Non-Federal sources	(69,949)	(59,485)	(60,623)	(60,623)	0
Total offsetting collections	(148,193)	(163,094)	(163,170)	(163,170)	0
Unobligated balance, start of year	(189,322)	(179,216)	(168,008)	(168,008)	0
Unobligated balance transferred					
Unobligated balance, end of year	179,216	168,008	168,008	168,008	0
Change in uncollected customer payments - Federal	(8,207)	0	0	0	0
Budget Authority	0	0	0	0	0
Financing:					
Transfer from other accounts	0	0	0	0	0
Appropriation	0	0	0	0	0

Department of Commerce
National Institute of Standards and Technology
Working Capital Fund
PROGRAM AND PERFORMANCE: REIMBURSABLE OBLIGATIONS
(Dollar amounts in thousands)

Activity: NIST Reimbursable Services

Comparison by activity/subactivity		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
Laboratory Programs	Pos./BA	633	$153,516	595	$158,448	597	$148,244	597	$148,244	0	0
	FTE/Obl.	546	153,516	595	158,448	597	148,244	597	148,244	0	0
Corporate Services	Pos./BA	13	4,238	15	4,633	15	4,849	15	4,849	0	0
	FTE/Obl.	11	4,238	15	4,633	15	4,849	15	4,849	0	0
Standards Coordination	Pos./BA	28	8,838	28	9,646	28	10,077	28	10,077	0	0
and Special Programs [1/]	FTE/Obl.	23	8,838	28	9,646	28	10,077	28	10,077	0	0
Manufacturing USA	Pos./BA	0	(18) [2/]	0	(21) [2/]	0	0	0	0	0	0
	FTE/Obl.	0	(18) [2/]	0	(21) [2/]	0	0	0	0	0	0
Hollings Manufacturing	Pos./BA	0	(68) [2/]	2	1,596	0	0	0	0	0	0
Extension Partnership	FTE/Obl.	0	(68) [2/]	2	1,596	0	0	0	0	0	0
WCF investments	Pos./BA	674	166,506	640	174,302	640	163,170	640	163,170	0	0
Total	FTE/Obl.	580	166,506	640	174,302	640	163,170	640	163,170	0	0

[1/] Includes Baldrige Performance Excellence Program (BPEP).
[2/] Repayment of loan principal for past invested equipment over current year's investment, resulting a net negative amount.

Department of Commerce
National Institute of Standards and Technology
Working Capital Fund
JUSTIFICATION OF PROGRAM AND PERFORMANCE

Activity: NIST Working Capital Fund

There is no base funding for the program.

This Working Capital Fund (WCF) reflects the full-time equivalent employment and reimbursable obligations associated with the reimbursable work performed by NIST for other agencies, the public, and WCF investments. NIST's reimbursable services consist of technical work performed for other Federal agencies; state and local governments; and the private sector, including calibrations and special tests, advisory services, the sale of Standard Reference Materials and Baldrige Performance Excellence Program fees.

The unique measurement and standards expertise, developed with appropriated funding, gives NIST the capability to perform these services on a reimbursable basis. NIST accepts other agency work, based on an established set of criteria, which include: (1) the need for traceability of measurements to national standards; (2) the need for work which cannot or will not be addressed by the private sector; (3) work supported by legislation that authorizes or mandates certain services; (4) work which would result in an unavoidable conflict of interest if carried out by the private sector or regulatory agencies; and (5) requests by the private sector for NIST action or services.

Department of Commerce
National Institute of Standards and Technology
Working Capital Fund
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$70,990	$77,239	$79,402	$79,402	0
11.3	Other than full-time permanent	5,252	5,517	5,517	5,517	0
11.5	Other personnel compensation	1,085	1,085	1,085	1,085	0
11.9	**Total personnel compensation**	77,327	83,841	86,004	86,004	0
12.1	Civilian personnel benefits	28,084	29,239	29,622	29,622	0
13	Benefits for former personnel	5	5	5	5	0
21	Travel and transportation of persons	1,398	1,402	1,027	1,027	0
22	Transportation of things	115	116	85	85	0
23.1	Rental payments to GSA	29	29	29	29	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and miscellaneous charges	4,195	4,195	4,145	4,145	0
24	Printing and reproduction	64	64	47	47	0
25.1	Advisory and assistance services	641	597	324	324	0
25.2	Other services from non-Federal sources	5,393	5,424	3,972	3,972	0
25.3	Other goods and services from Federal sources	12,629	12,649	10,536	10,536	0
25.5	Research and development contracts	6,077	6,101	4,468	4,468	0
25.7	Operation and maintenance of equipment	4,222	4,234	3,101	3,101	0
26	Supplies and materials	14,678	14,713	10,996	10,996	0
31	Equipment	914	914	914	914	0
32	Land and structures	0	0	0	0	0
41	Grants, subsidies, and contributions	10,733	10,777	7,893	7,893	0
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	2	2	2	2	0
99	Total Obligations	166,506	174,302	163,170	163,170	0

Personnel Data	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
Full-time equivalent employment:					
Full-time permanent	525	585	585	585	0
Other than full-time permanent	55	55	55	55	0
Total	580	640	640	640	0
Authorized Positions:					
Full-time permanent	656	622	622	622	0
Other than full-time permanent	18	18	18	18	0
Total	674	640	640	640	0

Department of Commerce
National Institute of Standards and Technology
Working Capital Fund
ADVISORY AND ASSISTANCE SERVICES
(Obligations in thousands of dollars)

	FY 2023 Actual	FY 2024 Annualized CR	FY 2025 Estimate
Consulting Services			
Management and professional support services	$371	$297	$24
Studies, analyses, and evaluations	0	0	0
Engineering and technical services	270	300	300
Total	641	597	324

Significant Activities

Advisory and assistance services funded by the Working Capital Fund represent services funded by reimbursable funds in support of reimbursable work conducted at NIST.

Need for Advisory and Assistance Services

Advisory and Assistance services have been necessary to obtain additional expertise for conducting activities like the technical evaluation of the Department of Defense in its Manufacturing Innovation Institutes, for example.

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Department of Commerce
National Institute of Standards and Technology
Creating Helpful Incentives to Produce Semiconductors
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations	Appro-priation
2024 Estimate	461	413	$6,295,000	$25,175,600	$6,300,000
Less: Unobligated balance from prior year	0	0	0	0	0
2025 Adjustments to Base					
Other Changes:					
Less: Mondatory non-base adjustments	(461)	(413)	(6,295,000)	(25,175,600)	(6,300,000)
2025 Base	0	0	0	0	0
Plus: 2025 Program changes	461	438	6,095,000	8,724,000	6,095,000
Plus appropriation transferred to OIG					5,000
2025 Estimate	461	438	6,095,000	8,724,000	6,100,000

Comparison by activity with totals by activity		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
CHIPS Incentives Progran	Pos./Approp	164	$4,996,400	279	$4,996,100	0	0	279	$4,996,000	279	$4,996,000
	FTE/Obl.	88	136,918	240	19,214,750	0	0	240	7,086,324	240	7,086,324
CHIPS Research & Development	Pos./Approp	157	1,998,600	182	1,298,900	0	0	182	1,099,000	182	1,099,000
	FTE/Obl.	37	74,482	173	6,567,751	0	0	173	1,759,500	173	1,759,500
TOTALS	Pos./Approp	321	6,995,000 [1/]	461	6,295,000 [1/]	0	0	461	6,095,000 [1/]	461	6,095,000
	FTE/Obl.	125	211,400	413	25,782,501	0	0	413	8,845,824	413	8,845,824
Adjustments for											
Recoveries			0		0		0		0		0
Refunds			0		0		0		0		0
Unobligated balance, start of year			(23,992,478)		(30,776,078)		0		(11,288,577)		(11,288,577)
Unobligated balance, end of year			30,776,078		11,288,577		0		8,537,753		8,537,753
Budget Authority/Appropriation			6,995,000		6,295,000		0		6,095,000		6,095,000
Adjustments for											
Plus appropriation transferred to OIG			5,000		5,000		0		5,000		5,000
Plus appropriation transferred to BIS			0		0		0		0		0
Appropriation			7,000,000		6,300,000		0		6,100,000		6,100,000

[1/] Enacted CHIPS appropriation here does not include tranfers to Office of Inspector General (OIG).

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Department of Commerce
National Institute of Standards and Technology
Creating Helpful Incentives to Produce Semiconductors
ADJUSTMENTS TO BASE
(Dollar amounts in thousands)

	Perm. Pos.	FTE	Amount
Transfer	…	…	0
Adjustment	…	…	0
Financing	…	…	0
Other Changes:			
FY 2024 pay raise	…	…	$492
FY 2025 pay raise	…	…	567
Change in compensable days	…	…	0
Annualization of positions financed in FY 2024	0	0	
Awards	…	…	0
Personnel benefits			945
Travel and transportation of persons			17
Rental Payments to GSA	…	…	1,000
Other services:			
Working Capital Fund Departmental Management	…	…	12,800
NARA storage costs	…	…	0
General pricing level adjustment	…	…	11,441
Subtotal, Other Changes	0	0	27,262
Total, Adjustments to base	0	0	27,262

Department of Commerce
National Institute of Standards and Technology
Creating Helpful Incentives to Produce Semiconductors
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: CHIPS Incentives Program and Incentive Loans

Line Item		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
CHIPS Incentives	Pos./Approp	0	$4,900,000	0	$4,900,000	0	$0	0	$4,900,000	0	$4,900,000
	FTE/Obl.	0	0	0	18,364,400	0	0	0	6,921,400	0	6,921,400
CHIPS Incentives Admin	Pos./Approp	164	96,400	279	96,100	0	0	279	96,000	279	96,000
	FTE/Obl.	88	136,918	240	129,600	0	0	240	74,600	240	74,600
	Pos./Approp	**164**	**4,996,400**	**279**	**4,996,100**	**0**	**0**	**279**	**4,996,000**	**279**	**4,996,000**
Incentives Program Subtotal	**FTE/Obl.**	**88**	**136,918**	**240**	**18,494,000**	**0**	**0**	**240**	**6,996,000**	**240**	**6,996,000**
CHIPS Incentive Loans	Pos./Approp	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	0	0	$720,750	0	0	0	$90,324	0	$90,324
Total	Pos./Approp	164	4,996,400	279	4,996,100	0	0	279	4,996,000	279	4,996,000
	FTE/Obl.	88	136,918	240	19,214,750	0	0	240	7,086,324	240	7,086,324

Department of Commerce
National Institute of Standards and Technology
Creating Helpful Incentives to Produce Semiconductors
PROGRAM AND PERFORMANCE: DIRECT OBLIGATIONS
(Dollar amounts in thousands)

Activity: CHIPS Research & Development

Line Item		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
CHIPS Metrology (Admin by STRS)	Pos./Approp	111	$100,000	111	$29,000	0	0	111	$23,000	111	$23,000
	FTE/Obl.	0	55,168	111	112,000	0	0	111	112,000	111	112,000
CHIPS R&D Admin (Admin by STRS)	Pos./Approp	46	38,600	71	24,900	0	0	71	21,000	71	21,000
	FTE/Obl.	36	13,665	62	40,000	0	0	62	40,000	62	40,000
Mandatory CHIPS - STRS Subtotal	**Pos./Approp**	**157**	**138,600**	**182**	**53,900**	**0**	**0**	**182**	**44,000**	**182**	**44,000**
	FTE/Obl.	**36**	**68,833**	**173**	**152,000**	**0**	**0**	**173**	**152,000**	**173**	**152,000**
CHIPS NSTC (Admin by ITS)	Pos./Approp	0	1,323,000	0	1,100,000	0	0	0	1,030,000	0	1,030,000
	FTE/Obl.	0	5,314	0	3,329,086	0	0	0	1,462,500	0	1,462,500
CHIPS NAPMP (Admin by ITS)	Pos./Approp	0	490,000	0	95,000	0	0	0	0	0	0
	FTE/Obl.	0	0	0	2,940,000	0	0	0	95,000	0	95,000
CHIPS MUSA (Admin by ITS)	Pos./Approp	0	47,000	0	50,000	0	0	0	25,000	0	25,000
	FTE/Obl.	1	335	0	146,665	0	0	0	50,000	0	50,000
Mandatory CHIPS - ITS Subtotal	**Pos./Approp**	**0**	**1,860,000**	**0**	**1,245,000**	**0**	**0**	**0**	**1,055,000**	**0**	**1,055,000**
	FTE/Obl.	**1**	**5,649**	**0**	**6,415,751**	**0**	**0**	**0**	**1,607,500**	**0**	**1,607,500**
Total	Pos./Approp	157	1,998,600	182	1,298,900	0	0	182	1,099,000	182	1,099,000
	FTE/Obl.	37	74,482	173	6,567,751	0	0	173	1,759,500	173	1,759,500

Department of Commerce
National Institute of Standards and Technology
Mandatory Account: Creating Helpful Incentives to Produce Semiconductors for America
JUSTIFICATION OF PROGRAM AND PERFORMANCE

Activity: Creating Helpful Incentives to Produce Semiconductors for America
Subactivity: Creating Helpful Incentives to Produce Semiconductors for America

Goal Statement

The CHIPS for America program, housed within NIST, intends to revitalize the domestic semiconductor industry and spur innovation while creating good-paying jobs in communities across the country. Investments from the program will catalyze economically sustainable long-term growth in the domestic semiconductor industry in support of our national and economic security.

The Department has established four strategic goals for the CHIPS for America program:

1. Invest in U.S. production of strategically important semiconductor chips, particularly those using leading-edge technologies.
2. Assure a sufficient, sustainable, and secure supply of older and current generation chips for national security purposes and for critical manufacturing industries.
3. Strengthen U.S. semiconductor research and development (R&D) leadership to catalyze and capture the next set of critical technologies, applications, and industries.
4. Grow a diverse semiconductor workforce and build strong communities that participate in the prosperity of the semiconductor industry.

Base Program

There is no base funding for the program.

Within sections 9902 and 9906 of Title XCIX (“Creating Helpful Incentives to Produce Semiconductors for America”) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283 (hereinafter, “the NDAA”) authorizes the Secretary of Commerce to establish certain semiconductor manufacturing and R&D activities collectively called the “CHIPS program”, subject to the availability of appropriations. The CHIPS Act of 2022, Division A of P.L. 117-167 amends P.L. the NDAA and appropriates $50 billion to the Department of Commerce through the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Fund to implement the semiconductor programs. These funds provide for the CHIPS Act of 2022 related activities at NIST.

Section 9902 of the 2021 NDAA authorizes the Department to provide funding to eligible applicants to incentivize investment in facilities and equipment in the United States for the fabrication, assembly, testing, advanced packaging, production, or research and development of semiconductors, materials used to manufacture semiconductors, or semiconductor manufacturing equipment. The Department may provide

funding in various forms, including grants, cooperative agreements, other transactions, loans, and loan guarantees. The CHIPS Act of 2022 appropriates $39 billion for these purposes. With these funds, the Department will establish an incentives program to support the expansion of manufacturing capacity for mature nodes and to attract large-scale investments in advanced technologies such as leading-edge logic and memory.

Section 9906 of the 2021 NDAA authorizes the Department to establish a National Semiconductor Technology Center (NSTC) to conduct research and prototyping of advanced semiconductor technology and to establish a National Advanced Packaging Manufacturing Program (the “Advanced Packaging” program or “NAPMP”) led by the director of NIST. Section 9906 also authorizes NIST to establish up to three Manufacturing USA institutes to advance research and commercialization of semiconductor manufacturing technologies, and to carry out an R&D program to advance measurement science, standards, material characterization, instrumentation, testing, and manufacturing capabilities. The CHIPS Act of 2022 appropriates $11 billion for these purposes.

Department of Commerce
National Institute of Standards and Technology
Mandatory Account: Creating Helpful Incentives to Produce Semiconductors for America
JUSTIFICATION OF PROGRAM AND PERFORMANCE

Department of Commerce Cost Estimates for the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Fund

Background

Title XCIX ("Creating Helpful Incentives to Produce Semiconductors for America") of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283 (hereinafter, "P.L. 116-283") authorizes the Secretary of Commerce to establish certain semiconductor related programs, subject to the availability of appropriations. The CHIPS Act of 2022, Division A of P.L. 117-167 (hereinafter, "the Act") amends P.L. 116-283 and appropriated $50 billion to the Department of Commerce through the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Fund to implement the semiconductor programs.

Requirement

Section 102 (a)(4)(A)(I) of the Act requires submission to Congress of detailed account, program, and project allocations of the full amount made available for the CHIPS for America Fund for fiscal year (FY) 2025, as part of the annual budget submission of the President under section 1105(a) of title 31, United States code. The President delegated to the Secretary of Commerce the authority to submit this cost estimate to the Congress by Presidential Memorandum signed on August 9, 2022. This cost estimate fulfills this requirement.

Allocation of Amounts Appropriated for FY 2025

The Act appropriated $6.1 billion for FY 2025 to carry out sections 9902 and 9906 of P.L. 116-283, as amended. The Secretary of Commerce has delegated authority to perform the functions and duties necessary to implement section 9902 and 9906 to the Undersecretary of Commerce for Standards and Technology and Director of the National Institute of Standards and Technology (NIST). In FY 2025, the Department allocates the $6.1 billion appropriated to programmatic expenditures as well as the administrative costs of the programs funded via the Act. Allocations for the funds appropriated for FY 2025 by account, program, and project are detailed below:

Section 9902: Incentives Program – $5.0 Billion

P.L. 116-283, as amended, authorizes the Secretary of Commerce to set up a semiconductor incentives program. The program may provide Federal financial assistance to eligible entities (called "covered entities" in the law) to incentivize investment in facilities and equipment in the United States for the fabrication, assembly, testing, advanced packaging, production, or research and development (R&D) of semiconductors, materials used to manufacture semiconductors, or semiconductor manufacturing equipment. Consistent with the Act, the Department allocates $5 billion to the incentives program to continue to make financial assistance awards to spur investment in domestic production capacity for semiconductors to include addressing national security requirements.

Consistent with section 102(a)(2)(B)(ii), the Department allocates two percent ($100 million) of the amount appropriated for FY 2025 for salaries and expenses, administration, and oversight expenses necessary to carry out section 9902, with $4.0 million of this amount to be transferred to the Office of the Inspector General Office of the Inspector General (OIG) for oversight. This funding will support Federal staffing for administration and oversight, hiring of contractors and consultants, and other expenses necessary to execute the program.

With the amounts appropriated for FY 2025 for section 9902, the Department will:

- Award, administer, and monitor financial incentives to eligible applicants and
- Maintain and expand the resources—staffing, contracts, technology, equipment, and facilities necessary to oversee the program,

Unspent amounts appropriated in prior years as well as FY 2025 will be carried forward, with amounts allocated for administration used for that purpose and other amounts carried forward used to make awards under this section.

Section 9906 – $1.1 billion

The Act appropriated $1.1 billion to implement the programs authorized in section 9906 of P.L. 116-283, as amended. Below is an estimate of the allocation of funds across the different subsections of section 9906 based on the expected-out year costs of the programs. These amounts are subject to change based on early implementation activities in FY 2025, including further definition of the requirements for the NSTC, NAPMP and metrology research. Consistent with section 102(a)(2)(B)(ii), the Department allocates two percent ($22 million) of the amount appropriated for FY 2025 for salaries and expenses, administration, and oversight expenses necessary to carry out section 9906, with $1.0 million of this amount to be transferred to the Office of the Inspector General (OIG) for oversight. The Department will use these funds in FY 2025 to cover the costs of administrative functions, including continuing to hire Federal personnel for administration and oversight, acquire consulting and contract support resources, and pay other related costs such as facilities, equipment, travel, and general operating expenses.

Unspent amounts appropriated for prior years as well as FY 2025 will be carried forward and used for administration costs that continue to help advance R&D efforts described under this section.

Section 9906(c): National Semiconductor Technology Center (NSTC) – $1.03 billion

The Department allocates $1.03 billion of the funding provided for section 9906(c) for FY 2025 to provide ongoing funding for projects and operations of the NSTC.

With the amounts appropriated for FY 2025, the Department will:

- Fund programmatic activities and facility operations consistent with the plans of the NSTC (may include R&D grand challenges, operation of prototyping facilities, road mapping activities, investment in innovative new semiconductor technology, and relevant workforce development efforts).

Section 9906(d): Advanced Packaging Manufacturing Program (NAPMP) – $0

The Department allocates no additional funding for section 9906(d) in FY 2025 to the NAPMP. However, with funding allocated in previous fiscal years, in FY25 the Department will continue to:

- Support Advanced Packaging research and technology projects initiated in FY 2023, and
- Pay for the operational costs of packaging pilot facilities established in partnership with the NSTC.

Section 9906(e): Metrology Program and Section 9906(f): Manufacturing USA Institute (MUSA) – $48 million
The Department allocates $48 million of the funding provided for section 9906 for FY 2025 to MUSA and the Metrology program. With amounts appropriated for FY 2025, the Department will:

- Allocate $25 million to MUSA to provide support to the institutes that will have been established using prior year funding.
- Allocate $23 million to the NIST metrology R&D programs, to provide continued support for the metrology R&D program to enable advances and breakthroughs in measurement science, standards, material characterization, instrumentation, testing, and manufacturing capabilities.

Department of Commerce
National Institute of Standards and Technology
Creating Helpful Incentives to Produce Semiconductors (CHIPS)
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$14,498	$43,978	0	$45,186	45,186
11.3	Other than full-time permanent	5,445	17,705	0	18,057	18,057
11.5	Other personnel compensation	214	170	0	173	173
11.9	**Total personnel compensation**	20,157	61,853	0	63,416	63,416
12.1	Civilian personnel benefits	7,433	22,906	0	23,354	23,354
13	Benefits for former personnel	1	0	0	0	0
21	Travel and transportation of persons	660	2,894	0	2,944	2,944
22	Transportation of things	9	30	0	30	30
23.1	Rental payments to GSA	0	0	0	0	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and miscellaneous charges	3	1,758	0	1,767	1,767
24	Printing and reproduction	6	18	0	18	18
25.1	Advisory and assistance services	36,234	72,711	0	17,711	17,711
25.2	Other services from non-Federal sources	68,954	18,288,526	0	6,843,618	6,843,618
25.3	Other goods and services from Federal sources	27,761	79,598	0	79,298	79,298
25.5	Research and development contracts	11,731	19,749	0	19,749	19,749
25.7	Operation and maintenance of equipment	1,663	916	0	926	926
26	Supplies and materials	969	4,060	0	4,120	4,120
31	Equipment	35,819	5,271	0	5,339	5,339
32	Land and structures	0	0	0	0	0
33	Investments and loans	0	7,222,211	0	1,783,534	1,783,534
41	Grants, subsidies, and contributions	0	0	0	0	0
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
99	Total Obligations	211,400	25,782,501	0	8,845,824	8,845,824

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	$211,400	$25,782,501	0	$8,845,824	8,845,824
	Adjustments for:					
	Recoveries	0	0	0	0	0
	Refunds of prior year paid obligations	0	0	0	0	0
	Unobligated balance from offsetting collections, start of year	(23,992,478)	(30,776,078)	0	(11,288,577)	(11,288,577)
	Unobligated balance transfer to CHIPS Loan Program		6,000,000			0
	Unobligated balance from offsetting collections, end of year	30,776,078	5,288,577	0	8,537,753	8,537,753
	Budgetary Resources - Mandatory Account	6,995,000	6,295,000	0	6,095,000	6,095,000
	Less: Offsetting collections	0	0	0	0	0
	Net Budget Authority - Mandatory Account	6,995,000	6,295,000	0	6,095,000	6,095,000
	Plus Transfers to Other Accounts					
	Appropriation transferred to OIG	5,000	5,000	0	5,000	5,000
	Appropriation transferred to BIS	0	0	0	0	0
	Appropriation	7,000,000	6,300,000	0	6,100,000	6,100,000
	Personnel Data					
	Full-time equivalent employment:					
	Full-time permanent:	86	281	0	281	281
	Other than full-time permanent	39	132	0	132	132
	Total	125	413	0	413	413
	Authorized Positions:					
	Full-time permanent	297	437	0	437	437
	Other than full-time permanent	24	24	0	24	24
	Total	321	461	0	461	461

Department of Commerce
National Institute of Standards and Technology
Creating Helpful Incentives to Produce Semiconductors (CHIPS) Incentives Progran
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$9,076	$23,600	0	$24,400	$24,400
11.3	Other than full-time permanent	5,150	15,100	0	15,400	15,400
11.5	Other personnel compensation	194	0	0	0	0
11.9	**Total personnel compensation**	14,420	38,700	0	39,800	39,800
12.1	Civilian personnel benefits	5,287	15,500	0	15,800	15,800
13	Benefits for former personnel	1	0	0	0	0
21	Travel and transportation of persons	468	2,500	0	2,550	2,550
22	Transportation of things	3	16	0	16	16
23.1	Rental payments to GSA	0	0	0	0	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and miscellaneous charges	3	450	0	459	459
24	Printing and reproduction	6	8	0	8	8
25.1	Advisory and assistance services	34,858	70,000	0	15,000	15,000
25.2	Other services from non-Federal sources	56,482	18,284,946	0	6,840,349	6,840,349
25.3	Other goods and services from Federal sources	23,663	75,000	0	75,000	75,000
25.5	Research and development contracts	0	0	0	0	0
25.7	Operation and maintenance of equipment	271	480	0	490	490
26	Supplies and materials	447	3,000	0	3,060	3,060
31	Equipment	1,009	3,400	0	3,468	3,468
32	Land and structures	0	0	0	0	0
41	Grants, subsidies, and contributions	0	0	0	0	0
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
99	Total Obligations	136,918	18,494,000	0	6,996,000	6,996,000

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	$136,918	$18,494,000	0	$6,996,000	6,996,000
	Adjustments for:					
	Recoveries	0	0	0	0	0
	Refunds of prior year paid obligations	0	0	0	0	0
	Unobligated balance from offsetting collections, start of year	(18,993,478)	(23,852,960)	0	(4,355,060)	(4,355,060)
	Unobligated balance transfer to CHIPS Loan Program	0	6,000,000	0	0	0
	Unobligated balance from offsetting collections, end of year	23,852,960	4,355,060	0	2,355,060	2,355,060
	Budgetary Resources - Mandatory Account	4,996,400	4,996,100	0	4,996,000	4,996,000
	Less: Offsetting collections	0	0	0	0	0
	Net Budget Authority - Mandatory Account	4,996,400	4,996,100	0	4,996,000	4,996,000
	Plus Transfers to Other Accounts					
	Appropriation transferred to STRS	138,600	53,900	0	44,000	44,000
	Appropriation transferred to ITS	1,860,000	1,245,000	0	1,055,000	1,055,000
	Appropriation transferred to OIG	5,000	5,000	0	5,000	5,000
	Appropriation transferred to BIS	0	0	0	0	0
	Appropriation	7,000,000	6,300,000	0	6,100,000	6,100,000
	Personnel Data					
	Full-time equivalent employment:					
	Full-time permanent:	51	131	0	131	0
	Other than full-time permanent	37	109	0	109	0
	Total	88	240	0	240	0
	Authorized Positions:					
	Full-time permanent	164	279	0	279	0
	Other than full-time permanent	0	0	0	0	0
	Total	164	279	0	279	0

Department of Commerce
National Institute of Standards and Technology
Creating Helpful Incentives to Produce Semiconductors (CHIPS) - Incentive Loans Program
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent					0
11.3	Other than full-time permanent					0
11.5	Other personnel compensation					0
11.9	**Total personnel compensation**	0	0	0	0	0
12.1	Civilian personnel benefits					0
13	Benefits for former personnel					0
21	Travel and transportation of persons					0
22	Transportation of things					0
23.1	Rental payments to GSA					0
23.2	Rental payments to others					0
23.3	Communications, utilities, and miscellaneous charges					0
24	Printing and reproduction					0
25.1	Advisory and assistance services					0
25.2	Other services from non-Federal sources					0
25.3	Other goods and services from Federal sources					0
25.5	Research and development contracts					0
25.7	Operation and maintenance of equipment					0
26	Supplies and materials					0
31	Equipment					0
32	Land and structures					0
33	Investments and loans	0	$720,750	0	$90,324	90,324
41	Grants, subsidies, and contributions					0
42	Insurance claims and indemnities					0
43	Interest and dividends					0
99	Total Obligations	0	720,750	0	90,324	90,324

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	0	$720,750	0	$90,324	90,324
	Adjustments for:					
	Recoveries	0	0	0	0	0
	Refunds of prior year paid obligations	0	0	0	0	0
	Unobligated balance from offsetting collections, start of year	0	0	0	(5,279,250)	(5,279,250)
	Unobligated balance transfer from CHIPS Incentives Program	0	(6,000,000)	0	0	0
	Unobligated balance from offsetting collections, end of year	0	5,279,250	0	5,188,926	5,188,926
	Budgetary Resources - Mandatory Account	0	0	0	0	0
	Less: Offsetting collections	0	0	0	0	0
	Net Budget Authority - Mandatory Account	0	0	0	0	0
	Plus Transfers to Other Accounts					0
	Appropriation	0	0	0	0	0
	Personnel Data					
	Full-time equivalent employment:					
	Full-time permanent:	0	0	0	0	0
	Other than full-time permanent	0	0	0	0	0
	Total	0	0	0	0	0
	Authorized Positions:					
	Full-time permanent	0	0	0	0	0
	Other than full-time permanent	0	0	0	0	0
	Total	0	0	0	0	0

Department of Commerce
National Institute of Standards and Technology
Creating Helpful Incentives to Produce Semiconductors (CHIPS) - STRS
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$5,180	$20,378	0	$20,786	$20,786
11.3	Other than full-time permanent	287	2,605	0	2,657	2,657
11.5	Other personnel compensation	20	170	0	173	173
11.9	**Total personnel compensation**	5,487	23,153	0	23,616	23,616
12.1	Civilian personnel benefits	2,047	7,406	0	7,554	7,554
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	192	394	0	394	394
22	Transportation of things	6	14	0	14	14
23.1	Rental payments to GSA	0	0	0	0	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and miscellaneous charges	0	1,308	0	1,308	1,308
24	Printing and reproduction	0	10	0	10	10
25.1	Advisory and assistance services	1,376	2,711	0	2,711	2,711
25.2	Other services from non-Federal sources	12,472	3,580	0	3,269	3,269
25.3	Other goods and services from Federal sources	4,098	4,598	0	4,298	4,298
25.5	Research and development contracts	6,431	19,749	0	19,749	19,749
25.7	Operation and maintenance of equipment	1,392	436	0	436	436
26	Supplies and materials	522	1,060	0	1,060	1,060
31	Equipment	34,810	1,871	0	1,871	1,871
32	Land and structures	0	0	0	0	0
41	Grants, subsidies, and contributions	0	85,710	0	85,710	85,710
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
99	Total Obligations	68,833	152,000	0	152,000	152,000

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	$68,833	$152,000	0	$152,000	$152,000
	Adjustments for:					
	Unobligated balance from offsetting collections, start of year	(489,000)	(558,767)	0	(460,667)	(460,667)
	Unobligated balance from offsetting collections, end of year	558,767	460,667	0	352,667	352,667
	Budgetary Resources - Mandatory Account	138,600	53,900	0	44,000	44,000
	Plus Transfers from Other Accounts	(138,600)	(53,900)	0	(44,000)	(44,000)
	Appropriation	0	0	0	0	0
	Personnel Data					
	Full-time equivalent employment:					
	Full-time permanent:	34	150	0	150	0
	Other than full-time permanent	2	23	0	23	0
	Total	36	173	0	173	0
	Authorized Positions:					
	Full-time permanent	133	158	0	158	0
	Other than full-time permanent	24	24	0	24	0
	Total	157	182	0	182	0

Department of Commerce
National Institute of Standards and Technology
Creating Helpful Incentives to Produce Semiconductors (CHIPS) - ITS
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
11	Personnel compensation					
11.1	Full-time permanent	$242	0	0	0	0
11.3	Other than full-time permanent	8	0	0	0	0
11.5	Other personnel compensation	0	0	0	0	0
11.9	**Total personnel compensation**	250	0	0	0	0
12.1	Civilian personnel benefits	99	0	0	0	0
13	Benefits for former personnel	0	0	0	0	0
21	Travel and transportation of persons	0	0	0	0	0
22	Transportation of things	0	0	0	0	0
23.1	Rental payments to GSA	0	0	0	0	0
23.2	Rental payments to others	0	0	0	0	0
23.3	Communications, utilities, and miscellaneous charges	0	0	0	0	0
24	Printing and reproduction	0	0	0	0	0
25.1	Advisory and assistance services	0	0	0	0	0
25.2	Other services from non-Federal sources	0	0	0	0	0
25.3	Other goods and services from Federal sources	0	0	0	0	0
25.5	Research and development contracts	5,300	0	0	0	0
25.7	Operation and maintenance of equipment	0	0	0	0	0
26	Supplies and materials	0	0	0	0	0
31	Equipment	0	0	0	0	0
32	Land and structures	0	0	0	0	0
41	Grants, subsidies, and contributions	0	6,415,751	0	1,607,500	1,607,500
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
99	Total Obligations	5,649	6,415,751	0	1,607,500	1,607,500

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/Decrease from 2025 Base
99	Total Obligations	5,649	$6,415,751	0	$1,607,500	$1,607,500
	Adjustments for:					
	Recoveries	0	0	0	0	0
	Refunds of prior year paid obligations	0	0	0	0	0
	Unobligated balance from offsetting collections, start of year	(4,510,000)	(6,364,351)	0	(1,193,600)	(1,193,600)
	Unobligated balance from offsetting collections, end of year	6,364,351	1,193,600	0	641,100	641,100
	Budgetary Resources - Mandatory Account	1,860,000	1,245,000	0	1,055,000	1,055,000
	Less: Offsetting collections	0	0	0	0	0
	Net Budget Authority - Mandatory Account	1,860,000	1,245,000	0	1,055,000	1,055,000
	Plus Transfers from Other Accounts	(1,860,000)	(1,245,000)	0	(1,055,000)	(1,055,000)
	Appropriation	0	0	0	0	0
	Personnel Data					
	Full-time equivalent employment:					
	Full-time permanent:	1	0	0	0	0
	Other than full-time permanent	0	0	0	0	0
	Total	1	0	0	0	0
	Authorized Positions:					
	Full-time permanent	0	0	0	0	0
	Other than full-time permanent	0	0	0	0	0
	Total	0	0	0	0	0

Department of Commerce
National Institute of Standards and Technology
Creating Helpful Incentives to Produce Semiconductors (CHIPS)
ADVISORY AND ASSISTANCE SERVICES
(Obligations in thousands of dollars)

	FY 2023 Actual	FY 2024 Annualized CR	FY 2025 Estimate
Consulting Services			
Management and professional support services	$36,234	$72,711	$17,711
Studies, analyses, and evaluations	0	0	0
Engineering and technical services	0	0	0
Total	36,234	72,711	17,711

Significant Activities

Advisory and assistance services funded by mandatory resources through the Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Fund to implement the semiconductor programs.

Need for Advisory and Assistance Services

Advisory and Assistance services have been necessary to obtain additional expertise to conduct research and develop new standards, technologies and applications to implement the semiconductor programs in support of requirements in the Creating Helpful Incentives to Produce Semiconductors (CHIPS) Act.

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Department of Commerce

National Institute of Standards and Technology

REIMBURSABLE PROGRAM AND WORKING CAPITAL FUND INVESTMENTS

(Dollar amounts in thousands)

	FY 2023 Actual	FY 2024 Estimate	FY 2025 Estimate
Department of Defense			
Air Force	$11,249	$14,790	$15,400
Army	2,032	2,590	2,425
Navy	1,666	2,266	916
Other, Department of Defense	19,310	20,466	20,456
Subtotal, Department of Defense	34,257	40,112	39,197
Department of Agriculture	92	200	100
Department of Commerce	26,788	25,969	25,900
Department of Energy	2,785	2,648	2,900
Dept. of Health & Human Services	4,706	3,621	3,875
Dept. of Homeland Security	8,141	8,266	8,159
Department of the Interior	274	200	250
Department of Justice	7,697	8,211	7,600
Department of Transportation	1,363	480	550
Department of the Treasury	51	200	150
Department of Veterans Affairs	15	100	100
General Services Administration	8	6	7
National Aeronautics & Space Admin.	5,597	7,280	6,850
National Science Foundation	3,171	3,200	3,300
Nuclear Regulatory Commission	1,113	216	309
Other	1	2,900	3,300
Subtotal, Other Agency	96,059	103,609	102,547

	FY 2023 Actual	FY 2024 Estimate	FY 2025 Estimate
Calibrations & Testing	$7,304	$7,920	$8,160
Technical & Advisory Services	32,856	29,210	29,679
Standard Reference Materials	21,220	22,355	22,784
Subtotal, Other Reimbursables	61,380	59,485	60,623
Total, Reimbursable Program	157,439	163,094	163,170
Equipment Investments	18,308	25,044	25,044
IE Amortization	(17,721)	(13,836)	(25,044)
WCF Operating Adjustments	8,480	0	0
Total, WCF Investments	9,067	11,208	0
Total, Reimbursable Program and WCF Investments	166,506	174,302	163,170

Summary of National Institute of Standards and Technology (NIST)

The operations of the NIST Working Capital Fund are reported in a program and financing schedule printed in the President's Budget, as well as reflected in the reimbursable amounts throughout this budget. The fund finances the initial costs of work performed by NIST and is reimbursed by applicable appropriations and advances or reimbursements from other agencies. A detailed cost accounting system is used to ensure that the actual cost of work performed for each job or task is recorded and identified with the appropriate source of financing. In addition to its function as a revolving fund, the Working Capital Fund is also used to handle annual and sick leave on an accrued basis, to acquire equipment as an investment to be recovered through amortization charges to programs, to distribute indirect costs to programs as overhead, to carry the recoverable costs associated with the production of Standard Reference Materials, and to carry supply inventories until issued for program use.

The table below summarizes the total NIST program, according to the source of financing. Following this table is a summary of the NIST reimbursable program by sponsor and source of support.

Summary of Total NIST Discretionary Program [1/]

(Obligations in thousands)

	FY 2023			FY 2024			FY 2025			
Source and Use of Funds Spent	Perm. Pos. [2/]	FTE	Oblig.	Perm. Pos. [2/]	FTE	Oblig.	Perm. Pos. [2/]	FTE	Oblig.	Approp. Requested
Direct Funding										
Scientific and technical research and services	2,808	2,490	$929,674	2,808	2,661	$1,100,173	2,893	2,725	$976,500	$975,000
Industrial technology services	131	112	207,707	131	123	251,155	131	123	212,000	212,000
Construction of research facilities	156	142	596,639	156	151	523,090	152	148	311,500	311,500
Total, direct funding	3,095	2,744	1,734,020	3,095	2,935	1,874,418	3,176	2,996	1,500,000	1,498,500
Reimbursable Funding and WCF Investments										
Construction of research facilities - building surcharge	0	0	932	0	0	1,123	0	0	0	
Research, development and supporting services:										
Federal government	426	367	96,059	405	405	103,609	405	405	102,547	
Calibrations and tests, technical and advisory services:										
Federal government	19	16	5,037	18	18	4,572	18	18	4,671	
Public and non-federal government	114	98	31,104	108	108	28,236	108	108	28,846	
Subtotal, Services	133	114	36,141	126	126	32,808	126	126	33,517	
National Voluntary Laboratory Accreditation Program	22	19	4,019	21	21	4,322	21	21	4,322	
Standard reference materials (SRMs):										
SRM Sales:										
Federal government	0	0	47	0	0	48	0	0	50	
Public and non-federal government	93	80	21,055	88	88	22,307	88	88	22,734	
Subtotal, SRM sales	93	80	21,102	88	88	22,355	88	88	22,784	
SRM investment adjustment	0	0	118	0	0	0	0	0	0	
Subtotal, SRM	93	80	21,220	88	88	22,355	88	88	22,784	
Total, Reimbursable program	674	580	158,371 [3/]	640	640	164,217 [3/]	640	640	163,170	
WCF Investments and Operating Adjustments										
WCF investments	0	0	18,308	0	0	25,044	0	0	25,044	
WCF operating adjustments	0	0	8,480	0	0	0	0	0	0	
Total, WCF Investments and operating adjustments	0	0	26,788	0	0	25,044	0	0	25,044	
Total, NIST program	3,769	3,324	1,919,179	3,735	3,575	2,063,679	3,816	3,636	1,688,214	
Offsetting adjustment for amortization of equipment	0	0	(17,721)	0	0	(13,836)	0	0	(25,044)	
Adjusted total, NIST program	3,769	3,324	1,901,458	3,735	3,575	2,049,843	3,816	3,636	1,663,170	

[1/] For comparison reason, mandatory programs funded by Creating Helpful Incentives to Produce Semiconductors (CHIPS) are not included.

[2/] Most NIST scientists and engineers are not engaged solely on one research project. Individuals may divide their time between two or more projects financed by different sources of support. Also, salary costs of many staff members are charged to an overhead account and subsequently prorated to all directly funded projects. For these reasons, it is not possible to report employment directly for any source of financing. The Permanent Positions above are statistically-derived numbers, based on the estimated work years distribution for NIST programs.

[3/] Total reimbursable numbers are different from the next section due to inclusion of CRF reimbursable obligations.

Department of Commerce
National Institute of Standards and Technology
PERIODICALS, PAMPHLETS, AND AUDIOVUSUAL PRODUCTS
(Obligations in thousands of dollars)

	2023 Actual	2024 Annualized CR	2025 Estimate
Periodicals	0.0	0.0	0.0
Pamphlets	$10.0	$10.0	$10.0
Audiovisuals	85.0	175.0	265.0
Total	$95.0	$185.0	$275.0

NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life. In order for our efforts to stimulate innovation, foster industrial competitiveness, and improve the quality of life, we need to broadly disseminate our work. NIST mainly accomplishes this through its primary public web site, www.nist.gov, and other subsidiary sites. We also produce collateral and AV materials, almost all of which direct individuals back to the www.nist.gov resource for additional information.

NIST produces a small number of printed products to be distributed at conferences where NIST exhibits. These products include postcards, a print periodic table with more information about NIST science, metric conversion cards, and laptop stickers.

NIST's audiovisual products are primarily short (under 5 minutes) videos and animations created to highlight NIST's discoveries, science, people and/or history. The use of video in science communications is becoming increasingly popular as a way to effectively convey complex information and make it more engaging and accessible to a wider audience. These products are mainly distributed via the NIST website, YouTube and other social media channels and shared at conferences where NIST is exhibiting. Actuals for FY23 were significantly lower than expected due to contracts support not being awarded in time to complete projects during that fiscal year. The increase in estimated costs for video production are due to upgrading the various products/applications we use to enterprise versions to meet cybersecurity requirements and the need to expand contract support for video production to meet the increased demand for video content.

Department of Commerce
National Institute of Standards and Technology
AVERAGE SALARY AND BENEFITS

	2023 Actual	2024 Estimate	2025 Estimate
Average ES	$310,958	$325,262	$331,767
Average scientific and professional	287,375	300,594	306,605
Average career path	190,879	199,659	203,653
Average ungraded positions	101,290	105,949	108,069

FY 2024 average salaries reflect a 5.2 percent pay raise and FY 2025 average salaries reflect a 2.0 percent pay raise. Benefits rate of 35% is used per the OPM rate assumption.

Department of Commerce
National Institute of Standards and Technology
IMPLEMENTATION STATUS OF GAO AND OIG RECOMMENDATIONS

31 U.S.C. 720, as amended January 3, 2019, requires the head of a federal agency to submit a written statement of the actions taken or planned on Government Accountability Office (GAO) recommendations to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 180 calendar days after the date of the report. The Good Accounting Obligation in Government Act (GAO-IG Act), passed on January 3, 2019, (P.L. 115-414) requires each agency to include, in its annual budget justification, a report that identifies each public recommendation issued by GAO and the agency's office of the inspector general (OIG) which has remained unimplemented for one year or more from the annual budget justification submission date. In addition, the Act requires a reconciliation between the agency records and the IGs' Semiannual Report to Congress.

Section 1. Recommendations for which action plans were finalized since the last appropriations request.

Report Number	Report Title	Issue Date	Recommendation Number	Recommendation	Target Implementation Date	Closure Request Pending with GAO (Yes/No)	Clear Budget Implications (Yes/No)
GAO-23-105521	National Institute of Standards and Technology: Improved Workforce Planning Needed to Address Recruitment and Retention Challenges	2/28/2023	1	The Office of Human Resources Management (OHRM) Division Chiefs should track how often flexibilities have been used—including how often incentive payments have been offered and paid—to evaluate their success.	October 2024	No	No
GAO-23-105521	National Institute of Standards and Technology: Improved Workforce Planning Needed to Address Recruitment and Retention Challenges	2/28/2023	2	The OHRM Division Chiefs should develop and implement a succession planning framework and link leadership development programs and technical training to succession planning efforts.	October 2024	No	No
GAO-23-105521	National Institute of Standards and Technology: Improved Workforce Planning Needed to Address Recruitment and Retention Challenges	2/28/2023	3	Directors of NIST's key operating units, including its HR office and laboratories, should collaborate to develop and implement an agency-wide strategic workforce process, which addresses recruitment, retention, DEIA, and succession planning.	October 2024	No	No

Report Number	Report Title	Issue Date	Recommendation Number	Recommendation	Target Implementation Date	Closure Request Pending with GAO (Yes/No)	Clear Budget Implications (Yes/No)
GAO-23-105521	National Institute of Standards and Technology: Improved Workforce Planning Needed to Address Recruitment and Retention Challenges	2/28/2023	3	Directors of NIST's key operating units, including its HR office and laboratories, should collaborate to develop and implement an agency-wide strategic workforce process, which addresses recruitment, retention, DEIA, and succession planning.	October 2024	No	No

Section 2. Implementation of GAO public recommendations issued no less than one year ago that are designated by GAO as 'Open' or 'Closed-Unimplemented.'

Open Recommendation(s) the Department has decided not to implement.

Report Number	None
Report Title	
Issue Date	
Recommendation Number	
Recommendation	
Reason for the Decision not to Implement	

Open Recommendation(s) the Department plans to implement.

Report Number	Report Title	Issue Date	Recommendation Number	Recommendation	Target Implementation Date	Closure Request Pending with GAO (Yes/No)	Clear Budget Implications (Yes/No)
GAO-17-3	Climate Change: Improved Federal Coordination Could Facilitate Use of Forward-Looking Climate Information in Design Standards, Building Codes, and Certifications	11/30/2016	1	To help reduce Federal fiscal exposure by enhancing the resilience of infrastructure to extreme weather, we recommend that the Secretary of Commerce, through the Director of the National Institute of Standards and Technology (NIST), in consultation with the Mitigation Framework Leadership Group (MitFLG) and the United States Global Change Research Program (USGCRP),	September 2024	No	

Report Number	Report Title	Issue Date	Recommendation Number	Recommendation	Target Implementation Date	Closure Request Pending with GAO (Yes/No)	Clear Budget Implications (Yes/No)
				convene Federal agencies for an ongoing governmentwide effort to provide the best available forward-looking climate information to standards-developing organizations for their consideration in the development of design standards, building codes, and voluntary certifications.			
19-409	Advanced Manufacturing: Innovation Institutes Have Demonstrated Initial Accomplishments, but Challenges Remain in Measuring Performance and Ensuring Sustainability	5/23/2019	1	The Secretary of Commerce should direct the NIST Director to work with other sponsoring federal agencies to develop and implement network-wide performance goals for the Manufacturing USA program with measurable targets and time frames.	Completed January 2021	Yes	
19-409	Advanced Manufacturing: Innovation Institutes Have Demonstrated Initial Accomplishments, but Challenges Remain in Measuring Performance and Ensuring Sustainability	5/23/2019	2	The Secretary of Commerce should direct the NIST Director to work with other sponsoring federal agencies to ensure that the Manufacturing USA network-wide performance measures are directly aligned with the network-wide performance goals, the Manufacturing USA strategic objectives and program goals, and the statutory purposes of the RAMI Act.	Completed January 2021	Yes	
GAO-20-81	Federal Research: Additional Actions Needed to Improve Publish Access to Research Results	11/21/2019	31	The National Institute of Standards and Technology Director should fully develop and implement a mechanism to ensure researcher compliance with the public access plan and associated requirements.	December 2024	No	
GAO-22-105016	Earthquakes: Opportunities Exist to Further Assess Risk, Build	05/04/2022	1	The Director of NIST should, in collaboration with FEMA, NSF, and USGS and in coordination with federal, state, local, territorial, and	September 2028	No	

Report Number	Report Title	Issue Date	Recommendation Number	Recommendation	Target Implementation Date	Closure Request Pending with GAO (Yes/No)	Clear Budget Implications (Yes/No)
	Resilience, and Communicate Research			tribal governments and stakeholders, conduct a national risk assessment to identify the progress made by communities to strengthen earthquake resilience since 2015, and the gaps in resilience that remain.			
GAO-22-105016	Earthquakes: Opportunities Exist to Further Assess Risk, Build Resilience, and Communicate Research	05/04/2022	3	The Director of NIST should, in collaboration with FEMA, NSF, and USGS assess and determine if additional actions are needed to obtain input from state, local, territorial, and tribal governments and stakeholders on research priorities that align with community and stakeholder needs.	December 2024	No	
GAO-22-105016	Earthquakes: Opportunities Exist to Further Assess Risk, Build Resilience, and Communicate Research	05/04/2022	5	The Director of NEHRP should, in collaboration with NIST, NSF, USGS, and FEMA, follow leading practices to develop performance measures linked to priority research outcomes, and to track and monitor research to ensure research priorities are being met.	December 2024	No	
GAO-22-105016	Earthquakes: Opportunities Exist to Further Assess Risk, Build Resilience, and Communicate Research	05/04/2022	6	The Director of NEHRP should, in collaboration with NIST, NSF, USGS, and FEMA, follow leading practices to identify and leverage the Program's resources needed to achieve research priority outcomes.	December 2024	No	
GAO-22-105016	Earthquakes: Opportunities Exist to Further Assess Risk, Build Resilience, and Communicate Research	05/04/2022	7	The Director of NIST should, in collaboration with NSF, document and implement a comprehensive plan to better ensure that all state, local, territorial and tribal governments and stakeholders are aware of the mechanisms and practices used by NSF and NIST for disseminating research.	December 2024	No	

Recommendations designated by GAO as "Closed-Unimplemented for the past 5 years (2015-2019). Future reports will cover a one-year period.

Report Number	None
Report Title	
Issue Date	
Recommendation Number	
Recommendation	
Reason Not Implemented	

Section 3. Implementation of OIG public recommendations issued no less than one year for which Final Action has not been Taken or Action Not Recommended has been Taken

Report Number	Report Title	Issue Date	Recommendation Number	Recommendation	Target Implementation Date	Reason no Final Action Taken or Action Not recommended taken	Closure Request Pending (Yes/No)
OIG-21-024-A	Audit of National Institute of Standards and Technology Working Capital Fund for Fiscal Year Ended September 30, 2019	5/3/2021	5	Develop and document for Fund Code 98 formal policies and procedures that describe roles and responsibilities by component for the process of tracking and billing costs, recording advances, the carryover process and tracking and monitoring the period of performance on an order when applicable.	Completed September 2023	Action completed	Yes

Section 4. Discrepancies between this report and the semiannual reports submitted by the Commerce Office of Inspector General or reports submitted by the GAO

Report Number	None
Report Title	
Issue Date	
Recommendation Number	
Recommendation	
Discrepancy	
Reason for Discrepancy	

Department of Commerce
National Institute of Standards and Technology
Description of Tribal Consultations

N/A – NIST does not believe Exhibit 42 pertaining to tribal consultations to be applicable to the agency.

U.S. DEPARTMENT OF COMMERCE
FY 2023/2025 Updated NIST APPR Backup

Manufacturing:

NIST made significant progress in implementing the programs specified in the CHIPS and Science Act, particularly the hosting the Industrial Advisory Committee (IAC), releasing a Request for Information (RFI) for incentives program and up to three new Manufacturing USA institutes, hiring the CHIPS R&D Metrology Program Director, and outlining a vision and strategy for a National Semiconductor Technology Center (NSTC).

As of June 23, 2023, it also seeks applications for the construction, expansion, or modernization of commercial facilities for semiconductor materials and manufacturing equipment, for which the capital investment equals or exceeds $300 M. Two additional funding opportunities—for materials and manufacturing equipment facilities with capital investments below $300 M, and for research and development facilities— were announced on September, 2023.

The Hollings Manufacturing Extension Partnership (MEP) has awarded roughly $400,000 to each of its MEP National Network™ Centers in every state and Puerto Rico. The more than $20 M of total funding will be used to develop programs to make domestic supply chains more resilient and efficient. The new awards will support the creation of a database called the national Supply Chain Optimization and Intelligence Network (SCOIN). It will focus on providing supplier scouting services, establishing new service offerings to improve existing supply chain networks, filling gaps in the supply chain by connecting original equipment manufacturers with small and medium-sized manufacturers, and creating a complete map of U.S. supplier capability and capacity.

NIST released a summary of public comments solicited to inform the design of, and requirements for potential Manufacturing USA institute(s) that would strengthen the semiconductor and microelectronics innovation ecosystem in such areas as design, fabrication, advanced test, assembly, and packaging capabilities. Manufacturing USA was also appropriated $14 M in support of CHIPS and Science Act responsibilities, and through this funding, Manufacturing USA will be standing up the WEAVE program for Workforce, Education and Vibrant Ecosystems. WEAVE competitively provides awards to current Manufacturing USA institutes to engage with HBCUs and minority-serving Institutions and to assist in scaling-up Institute-developed technologies to the public.

Critical and Emerging Technologies:

Quantum Information Science: NIST continues to support the quantum ecosystem through engagement with organizations such as the Quantum Economic Development Consortium (QED-C) and the Quantum Systems through Entangled Science and Engineering (Q-SEnSE) Institute.

NIST researchers released the results of a study on superconducting single-photon detectors that were used to improve constraints on dark matter by a factor of two, helping astrophysicists study the formation of the universe. NIST researchers also demonstrated a new device that integrated a quantum source and a low-loss photonic circuit on one microchip. This innovative development is an important step towards the realization of quantum photonic computers.

NIST continued to pursue identification of post-quantum cryptographic algorithms (also called quantum-resistant cryptographic algorithms) to develop cryptographic systems that are secure against both quantum and classical computers and can interoperate with existing communications protocols and networks. In recent years, there has been a substantial amount of research on quantum computers, which in the future could break many of the public-key cryptosystems currently in widespread use. This would seriously compromise the confidentiality and integrity of digital communications on the Internet and elsewhere, potentially putting trillions of dollars of economic activity as well as national security at risk.

Artificial Intelligence (AI): NIST is collaborating with other Federal agencies to develop AI-related policies, including:

- Establishing and administering the National Artificial Intelligence Advisory Committee to advise the President and the National AI Initiative Office on topics related to the National AI Initiative
- Co-chairing the National Science and Technology Council's (NSTC) Machine Learning and AI Subcommittee, which regularly updates and maintains the National AI R&D Strategic Plan and identifies and contributes to important policy issues for AI R&D, datasets, computational infrastructure, testing, standards, benchmarks, education, outreach, and related areas.
- Founding and co-chairing the AI Standards Coordination Working Group (AISCWG) under the Interagency Committee on Standards Policy (ICSP) to facilitate the coordination of federal government agency activities related to the development and use of AI standards, and to develop recommendations relating to AI standards.
- Co-chairing the Networking and Information Technology Research and Development's (NITRD) AI Working Group to *coordinate Federal AI R&D and support activities tasked by both the NSTC Select Committee on AI and the Subcommittee on Machine Learning and Artificial Intelligence. This vital work promotes U.S. leadership and global competitiveness in AI R&D and its applications.*

On December 1, 2022, the U.S., led by NIST and the EU, under the Trade and Technology Council issued the *Joint Roadmap on Evaluation and Measurement Tools for Trustworthy AI and Risk Management*. On January 26, 2023, NIST released the *AI Risk Management Framework* (AI RMF 1.0). More than 240 organizations were involved in the development of the AI RMF, and the public and private sector response has been overwhelmingly positive. The AI RMF is a resource for organizations to help manage the many risks of AI systems and promote its trustworthy and responsible development and use. NIST has also produced a playbook, explanatory video, and a crosswalk showing how the AI RMF maps to other AI documents including the EU AI Act.

NIST launched the Trustworthy and Responsible AI Resource Center on March 30, 2023, which will facilitate implementation of, and international alignment with, the AI RMF, enabling an interactive, role-based experience providing access to a wide-range of relevant AI resources.

On May 31, 2023, as part of TTC 4 deliverables, the U.S., led by NIST and the EU, under the Trade and Technology Council, 1) issued a list of 65 key AI terms essential to understanding risk-based approaches to AI, along with their U.S. and EU interpretations and shared U.S.-EU definitions and 2) mapped the respective involvement of the United States and the European Union in standardization activities with the goal of identifying relevant AI-related standards of mutual interest.

On June 22, 2023, U.S. Secretary of Commerce announced NIST's launching Public Working Group on Generative AI which will help NIST develop key guidance to help organizations address the special risks associated with generative AI technologies.

Biotechnology: NIST's research focuses on materials, measurements, and data to improve critical metrology needs in the biological sciences. NIST released the public lexicon on the bioeconomy to assist the field in the development of measurements and measurement methods. The lexicon will support important needs in economic measurement, risk assessments, and the application of machine learning and other artificial intelligence tools for the bioeconomy. Executive Order 14081 *Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy* directed NIST to develop the lexicon within 90 days (by December 15).

NIST released its first ever living cell line material, NISTCHO. The Research Grade Test Material (RGTM) is an industrially relevant, open-access cell line that allows for benchmarking of new processes and quality control for effective and efficient antibody drug production. RGTMs are a new class of standardization materials that can be produced faster than traditional certified materials, to meet the growing demands of the bioeconomy and the fast pace needed for the health industry.

In response to the Executive Order on Biotechnology and Biomanufacturing, a NIST coauthored report was released on how to leverage biotechnology and biomanufacturing to provide solutions for societal and national needs. Other agencies coauthoring the report included the DOC, DOE, NSF, Department of HHS, and United States DOA.

Advanced Communications: NIST is helping to build the measurement infrastructures that will be crucial for developing future wireless systems, including Fifth Generation (5G) and beyond cellular systems, by developing new measurement methods, analysis, and tools for generating high-fidelity data. NIST joined the Open Radio Access Network (O-RAN) Alliance, a nonprofit organization made up of mobile network operators, vendors, and academic and government institutions working to make radio access network technologies more open, intelligent, and interoperable. By joining the O-RAN Alliance, NIST will enhance U.S. leadership in wireless technologies and promote stable and diverse supply chains. This membership will also help NIST to promote open and transparent standards for 5G and other next-generation wireless technologies to help ensure data privacy and protect against cyber threats.

NIST entered into a cooperative research and development agreement with AIM Photonics that will give chip developers a critical new tool for designing faster chips that use both optical and electrical signals to transmit information. NIST's role in this collaboration will be to design electrical "calibration structures" that can be used to measure and test the electronic performance of photonic chips. The accurate measurements that these devices will provide will lead to improved chip designs, and will accelerate the development of new, faster generations of photonic chips. AIM Photonics will incorporate these calibration structures into its process design kit, a tool that engineers use when designing new chips for fabrication at AIM's facilities.

Cybersecurity:

NIST has delivered on its many responsibilities under the President's Executive Order on Improving the Nation's Cybersecurity (14028) to help enhance software supply chain security, engaging with stakeholders through multiple workshops and calls for papers. Most notably, NIST updated cybersecurity guidance for supply chain risk management. The revised publication, formally titled *Cybersecurity Supply Chain Risk Management Practices for Systems and Organizations*, provides guidance on identifying, assessing, and responding to cybersecurity risks throughout the supply chain at all levels of an organization. NIST also issued its final *Secure Software Development Framework* (SSDF) to help software producers reduce vulnerabilities in released software. The SSDF now serves as the basis for all federal government procurement of more secure software.

In the area of identity management and authentication, NIST issued its updated suite of technical guidance for federal agencies implementing digital identity services (NIST Special Publication 800-63). NIST also participated in several ISO/IEC committees and standardization initiatives related to identity management and authentication, including activities to develop standards for an identity management framework, the suite of standards supporting identity management via mobile devices, and the standards supporting mobile driver's licenses.

In the area of cybersecurity risk management, NIST released the draft of *The* NIST Cybersecurity Framework *(CSF)* 2.0 for public comment. This draft represents a major update to the CSF—a resource first released in 2014 to help organizations reduce cybersecurity risk. The draft update reflects changes in the cybersecurity landscape and makes it easier to put the CSF into practice for all organizations. NIST also released the final draft *Cybersecurity Framework Profile for Hybrid Satellite Networks (HSN)*, a practical guide to help organizations engaged in the design, acquisition, and operation of satellite networks to incorporate security and achieve greater resilience. NIST has also updated its draft guidelines for protecting sensitive unclassified information to help federal agencies and government contractors more consistently implement cybersecurity requirements. The revised draft guidelines, *Protecting Controlled Unclassified Information in Nonfederal Systems and Organizations* will be of particular interest to the many thousands of businesses that contract with the federal government.

Planned Actions through FY 2025

NIST has made significant progress on all its strategies over the past year. NIST will continue to focus on implementing the CHIPS and Science Act to help revitalize the U.S. domestic manufacturing economy, spur research and development in critical semiconductor industry, and secure U.S. supply chains for critical sectors.

NIST will also continue to support the National Science and Technology Council (NSTC), the Office of Science and Technology Policy (OSTP), and DOC in development and implementation of the White House and Departmental priorities.

NIST will continue to coordinate U.S. engagement in key critical and emerging technologies to advance U.S. economic and industrial competitiveness. NIST will continue to develop responses and execute Executive Order 14081 on Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy; Executive Order 13859 on Maintaining American Leadership in Artificial Intelligence; Executive Order 14028 on Improving the Nation's Cybersecurity; and other mandates.

Analysis of Performance Indicators

To ensure performance indicators are aligned with national needs, NIST continually collects information on major national issues, shifting trends in science and technology, and the performance of internal operational processes through a variety of mechanisms including internal and external evaluations, workshops, industry outreach, external advisory boards, and annual reviews of its programs. This input is viewed in the context of the NIST mission to make decisions on where NIST needs to develop specific capabilities and capabilities, how to best manage existing resources to address current issues, and how to continually optimize the organization for improved performance.

To track progress, NIST works with its standing advisory bodies, including the Visiting Committee on Advanced Technology and other program-specific advisory committees. NIST labs undergo periodic assessments by the National Academies of Sciences, Engineering, and Medicine (NASEM) to ensure NIST is addressing the nation's most pressing issues and with the highest-quality work.

Explanation of Trends

NIST's performance indicators track two types of metrics: impact factors and the willingness of industry to partner or co-invest with NIST. Performance indicators focused on impact track how NIST research benefits the development of new products and services, and the extent to which it produces relevant scientific and technical publications. Indicators that are focused on partnerships and co-investment, demonstrate the value that NIST brings to its partners. NIST continues to meet and exceed its performance targets.

Explanation of Targets for FY 2024 and FY 2025

NIST continues to prioritize and expand research in the areas relevant to AI, advanced manufacturing, advanced communications, bioscience, cybersecurity and privacy, and quantum science. Despite the continued operational challenges related to facilities conditions, increasing mandates that are not fully resourced, and difficulties in hiring and retaining talent in the areas of critical and emerging technologies, NIST proposed increases to its performance measures to reflect its commitment to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life.

Progression of the Performance Indicators

Performance indicators rely on the information that is tracked by specific units within NIST. This information is used for accounting and reporting purposes and in most cases has designated staff who are responsible for collecting, ensuring accuracy, and monitoring the data. The data serves as one of the indicators of the overall performance and 'health' of the designated function.

Performance Data Validation and Verification

NIST uses established processes to ensure accuracy and reliability of the data used to measure progress toward achieving the Strategic Objectives. The data is collected and retained in databases, which are maintained at the individual unit level. To automate and streamline the collection of this data, NIST could benefit by additional resources to incorporate Robotic Process Automation into regular workflows.

NIST Performance Indicators

Class	Strategic Objective	Performance Indicator	FY 2019 Actual	FY 2020 Actual	FY 2021 Actual	FY 2022 Actual	FY 2023 Actual	FY 2023 Target	FY 2023 Status	FY 2024 Target	FY 2025 Target
Proposed new	1.1	Value of advanced manufacturing technology portfolio within Commerce-sponsored Manufacturing USA Institutes	—	—	$47.30 M	$135.10 M	$147.00 M	$60.00 M	Exceeded	$152.00 M	$157.00 M

Proposed new	2.3	Growth in workforce services provided to small to midsized U.S. manufacturers	—	—	—	2,400	3,119	2,472	Exceeded	2,974	3,004
Current/ Recurring	1.2	International Adoption of NIST Quantum SI Standards	5	8	12	20	25	15	Exceeded	32	39
Proposed new	1.1	Number of small and medium manufacturers who receive technical assistance to increase contributions of additional key products and critical technologies in the domestic supply base	—	—	—	465	488	479	Exceeded	531	536
Proposed new	1.2	Number of U.S. Government staff trained to effectively coordinate, participate, and influence technical standards development	—	—	—	1,050	475	400	Exceeded	600	700
Proposed new	2.3	Growth in number of small to midsized manufacturers participating in MEP knowledge sharing events	—	—	—	2,590	3,581	2,668	Exceeded	3,906	3,945
Proposed new	1.2	Number of participants at outreach events, hosted by NIST to identify opportunities for engagement and influence in critical and emerging technology standards development	—	—	—	280	500	300	Exceeded	500	600
Current/ Recurring	1.6	Number of companies and organizations exposed to National Cybersecurity Center of Excellence (NCCoE) produced cybersecurity guides and other products	8,995	12,100	13,121	14,343	16,130	15,000	Exceeded	17,500	19,000

Current/ Recurring	1.6	Cumulative number of collaborators on NCCoE projects	190	294	396	513	625	440	Exceeded	750	900
Current/ Recurring	1.2	Relative citation impact of NIST - authored publications	1.59	1.57	1.57	1.57	1.07	1.40	Not Met	1.40	1.30
Proposed new	2.3	Growth in technology services provided to small to midsized U.S. manufacturers	—	—	—	1,600	1,492	1,648	Met	1,582	1,598
Current/ Recurring	1.6	Number of resources derived from the cybersecurity framework	133	159	179	189	204	190	Exceeded	220	240
Current/ Recurring	1.2	Number of businesses using NIST research facilities	486	530	492	525	655	350	Exceeded	400	550

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DEPARTMENT OF COMMERCE
National Technical Information Service
NTIS Revolving Fund
Budget Estimates, Fiscal Year 2025
Congressional Submission
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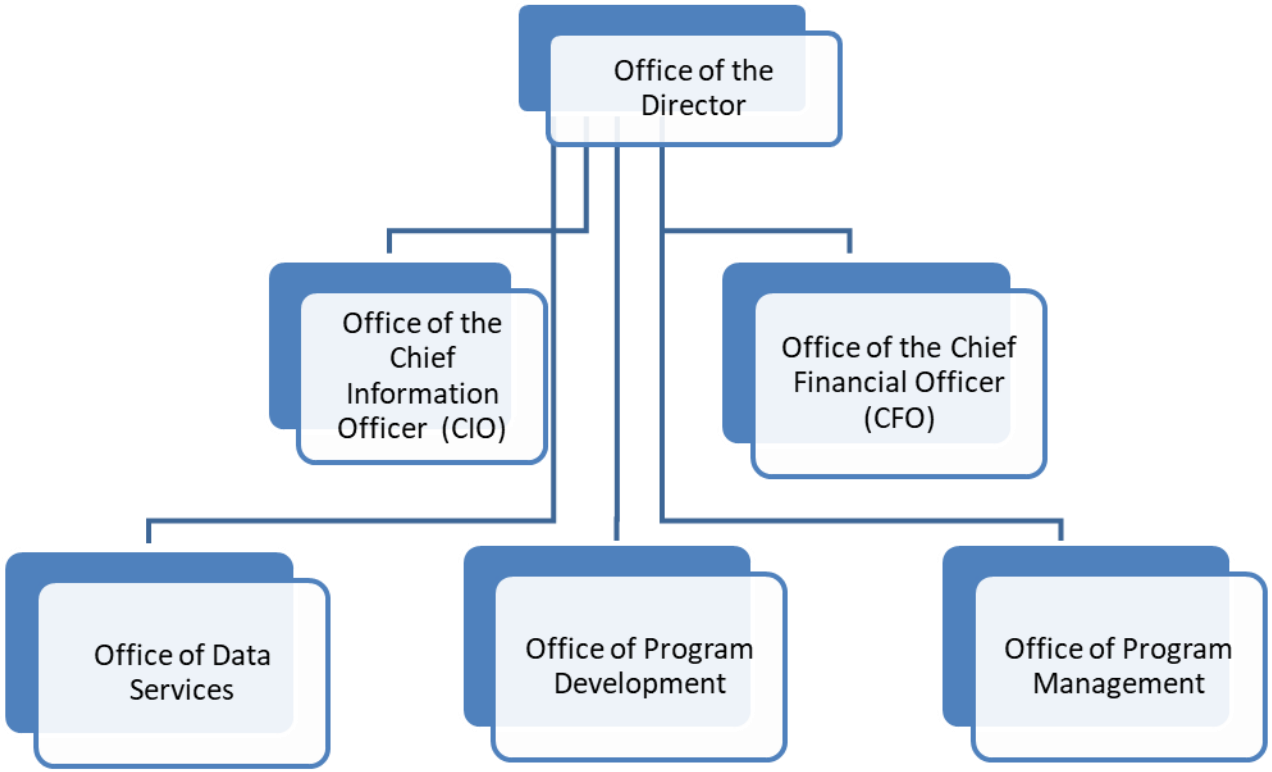
U.S Department of Commerce
National Technical Information Service



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Department of Commerce
National Technical Information Service
NTIS Revolving Fund
Budget Estimates, Fiscal Year 2025

Executive Summary

The National Technical Information Service (NTIS) is an Agency within the Department of Commerce that offers a wide array of information services to Federal agencies, American businesses, and the public. NTIS products and services support the entire data and information cycle from creating unique platforms to accessing, analyzing, and using data; combining data in new ways to enable innovative products and services; and delivering better data services to businesses, communities, and citizens. NTIS is a self-supporting agency without federal discretionary appropriations and recovers its operating costs from fees and the use of its Public Enterprise Revolving Fund.

NTIS provides information and data products and services across four broad areas:

- Data Discovery and Usability (e.g., data cataloging and inventories, data capture and storage, search engine optimization, interactive query management, customer analytics, user experience design of data portals, usability testing, user analytics).
- Data Interoperability and Standards (e.g., user interfaces for data portals, data cleansing and standards, metadata practices, developer platforms with suite of application program interface tools).
- Data Analytics and Forecasting (e.g., comparative/predictive data analytics, forecasting, statistical methods, computer science and machine learning methods, geospatial analysis, data visualization).
- Data Infrastructure and Security (e.g., data delivery services for access anytime, anywhere; enterprise data management; data delivery business models; software development life cycle; cybersecurity; cloud-based data solutions; assistive technologies; data collection services).

NTIS leverages its unique capabilities and authorities to partner with the private sector and other organizations to provide innovative data services to Federal agencies and to explore new service offering(s) and technologies that enables NTIS to advance Federal data priorities, promote economic growth, and enable operational excellence. Critical to success of these projects is the ability to use advanced software development processes, specifically:

- Agile and collaborative development process to support frequent software releases and risk reduction;
- DevOps process to tightly integrate software development with quality assurance, deployment, and operations while also supporting frequent releases and risk reduction; and,
- Lifecycle approach to software development (plan, code, build, test, release, deploy, and operate).

In addition to those four broad categories of products and services, NTIS offers a free permanent repository and clearinghouse for scientific, technical, engineering, and business information which includes more than 3 million publications covering more than 350 subject areas. Today, NTIS receives federal agency reports electronically, attaches robust metadata to these reports and ensures that the documents remain available to the public even if individual agencies remove them from their websites. NTIS's online database also presents this metadata and the full text of reports in a form that enables access across the internet. As a result, scientists, engineers, and other customers looking for federal reports and data get much better results from the search engines than would be possible without NTIS efforts. In addition, NTIS is often the only current source for many reports issued prior to 1995. As technology has evolved, projects related to online data and services have generated an increasing share of the agency's operating revenues. NTIS strongly supports the Department's commitment to make data easier for business, government, taxpayers, and communities to access, analyze, and use federal data assets. NTIS will evolve, and its service portfolio will continue to grow by supporting the entire data delivery pipeline with a focus on increasing access to data, combining data in new value-added ways, and delivering improved services and products.

Department of Commerce
National Technical Information Service
NTIS Revolving Fund
SUMMARY OF RESOURCE REQUIREMENTS
(Dollar amounts in thousands)

	Positions	FTE	Budget Authority	Direct Obligations
Appropriation Available, 2024	0	0	0	0
Plus 2025 Adjustments to Base	0	0	0	0
Less: Obligations from prior years	0	0	0	0
2025 Base	0	0	0	0
Plus 2025 program changes	0	0	0	0
2025 Estimate	0	0	0	0

		2023 Actual		2024 Annualized CR		2025 Base		2025 Estimate		Increase/Decrease over 2025 Base	
Comparison by activity/subactivity:		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
National Technical Information Service											
Organization, Preservation and Public	Pos./BA	0	0	0	0	0	0	0	0	0	0
Access to Technical Information	FTE/Obl.	0	0	0	0	0	0	0	0	0	0
Total	Pos./BA	0	0	0	0	0	0	0	0	0	0
	FTE/Obl.	0	0	0	0	0	0	0	0	0	0
Adjustments for:											
Recoveries		0	0	0	0	0	0	0	0	0	0
Unobligated balance, start of year		0	0	0	0	0	0	0	0	0	0
Unobligated balance transferred		0	0	0	0	0	0	0	0	0	0
Unobligated balance, end of year		0	0	0	0	0	0	0	0	0	0
Unobligated balance expiring		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
Financing from transfers:		0	0	0	0	0	0	0	0	0	0
Transfer from other accounts (-)		0	0	0	0	0	0	0	0	0	0
Transfer to other accounts (+)		0	0	0	0	0	0	0	0	0	0
Appropriation		0	0	0	0	0	0	0	0	0	0

Department of Commerce
National Technical Information Service
NTIS Revolving Fund
SUMMARY OF REIMBURSABLE OBLIGATIONS
(Dollar amounts in thousands)

Activity: Information Clearinghouse Program

Line Item		FY 2023 Actual		FY 2024 Annualized CR		FY 2025 Base		FY 2025 Estimate		Increase/Decrease from 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount	Personnel	Amount
National Technical Information Service:	Pos/Approp	43	0	43	0	43	0	43	0	0	0
Information Clearinghouse Program	FTE/Obl.	33	$67,838	43	$100,000	43	$100,000	43	$100,000	0	0
Total	Pos/Approp	43	0	43	0	43	0	43	0	0	0
	FTE/Obl.	33	67,838	43	100,000	43	100,000	43	100,000	0	0

Department of Commerce
National Technical Information Service
NTIS Revolving Fund
SUMMARY OF FINANCING
(Dollar amounts in thousands)

	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/ Decrease/ from 2025 Base
Total Obligations	$ 67,838	$ 100,000	$ 100,000	$ 100,000	0
Offsetting collections from:					
Federal funds	(64,922)	(95,000)	(95,000)	(95,000)	0
Trust funds	0	0	0	0	0
Non-Federal sources	(2,301)	(5,000)	(5,000)	(5,000)	0
Recoveries	0	0	0	0	0
Unobligated balance, start of year	(25,159)	(28,328)	(28,328)	(28,328)	0
Unobligated balance transferred	0	0	0	0	0
Unobligated balance, end of year	28,328	28,328	28,328	28,328	0
Unobligated balance expiring					
Change in uncollected customer payments - Federal	(3,784)	0	0	0	0
Budget Authority	0	0	0	0	0
Financing:					
Transfer from other accounts (-)	0	0	0	0	0
Transfer to other accounts (+)	0	0	0	0	0
Appropriation	0	0	0	0	0

Department of Commerce
National Technical Information Service
NTIS Revolving Fund
ADJUSTMENTS TO BASE
(Dollar amounts in thousands)

Exhibit 8

	Positions	Amount
Transfers of Estimates	0	0
Adjustments	0	0
Financing	0	0
Other Changes		
2024 Pay raise		17
2025 Pay raise		52
Awards		2
Full-year cost in 2025 of positions financed for part-year in 2024		0
Change in compensable days		0
Personnel Benefits		
Civil Service Retirement System (CSRS)		0
Federal Employees Retirement System (FERS)		24
Thrift Savings Plan		0
Federal Insurance Contribution Act (FICA) – OASDI		0
Health Insurance		0
Employees Compensation Fund		89
Travel:		
Mileage		0
Per Diem		0
Rental payments to GSA		19
GSA Furniture and IT Program (FIT)		0
Postage (Included in GPL adjustment)		0
Working Capital Fund, Departmental Management		6
Cybersecurity (Non-Add in WCF)		[-1]
National Archives and Records Administration (NARA)		0
General Pricing Level (GPL) Adjustment		0
Continuous Diagnostics and Mitigation Charges		0
Enterprise Services		0
Telecommunications Services – Enterprise Infrastructure Services (EIS)		-260
Commerce Business System (CBS)		0
Federal Protective Service		9
Other changes unique to certain bureaus (e.g., grants, ship and aircraft costs)		0
Subtotal, other changes	0	-42
Total, adjustments to base	0	-42

Department of Commerce
National Technical Information Service NTIS Revolving Fund
NTIS Revolving Fund
JUSTIFICATION OF PROGRAM AND PERFORMANCE
(Dollar amounts in thousands)

Activity: National Technical Information Service

Goal Statement

The National Technical Information Service (NTIS) promotes the data priorities of the Department of Commerce (DOC) and other federal agencies, including open access, open data, providing information and data services to the public, industry, and other federal agencies in ways that enable American innovation and economic growth. NTIS serves as a center of excellence that delivers trusted data networks through agile partnerships with the private sector which enable new and improved data products and services.

Base Program

NTIS' basic authority is to operate a permanent clearinghouse of scientific and technical information, codified as chapter 23 of Title 15 of the United States Code (15 U.S.C. 1151-1157). This chapter also established NTIS' authority to charge fees for its products and services and to recover all costs through such fees "to the extent feasible".

Statement of Operating Objectives

NTIS is funded by fees that it collects which are deposited into the NTIS Revolving Fund. NTIS' objectives are to (a) create unique data platforms that make it easier for the public, industry, and other federal agencies to access, analyze, and use data; (b) combine data in new ways to enable the delivery of innovative products and services; and (c) deliver better data services to businesses, communities, and citizens. These objectives are focused on supporting Department and federal data priorities, including open access and open data. This work requires collaborating with federal agencies, partnering with the private sector, delivering modern information and data services, and disseminating federally funded scientific, technical, and related information. NTIS will meet its objectives in the most cost-effective and efficient manner possible while ensuring strong governance and stewardship of its unique mission and authorities.

NTIS released the Public Access National Technical Reports Library on October 1, 2016, permitting the American public free access to the electronic scientific and technical reports in its repository, which collects and catalogues approximately 30,000 scientific and technical reports annually that are added to its permanent collection.

Explanation and Justification

NTIS continues to make substantial progress in improving its service to the public by establishing and maintaining data programs that assist other federal agencies in effectively disseminating information to the American public. A representative set of national data programs that NTIS will continue to provide to the American public includes NTIS Database and the Social Security Administration Limited Access Death Master File.

Line Item		FY 2023 Actual		FY 2024 Annualized CR		FY 2025 Estimate	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
NTIS Revolving Fund	Pos./BA	43		43		43	
	FTE/Obl	33	$ 67,838	43	$100,000	43	$100,000

Department of Commerce
National Technical Information Service
NTIS Revolving Fund - Reimbursable Obligations
SUMMARY OF REQUIREMENTS BY OBJECT CLASS
(Dollar amounts in thousands)

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/ Decrease from 2025 Base
11.1	Full-time permanent compensation	$ 4,303	$ 6,920	$ 6,920	$ 6,989	$ 69
11.3	Other than full-time permanent	0	0	0	-	0
11.5	Other personnel compensation	87	125	125	127	2
11.8	Special personnel services payments	0	0	0	-	0
11.9	Total personnel compensation	4,390	7,045	7,045	7,116	71
12.1	Civilian personnel benefits	1,940	1,887	1,887	2,000	113
13	Benefits for former personnel	0	0	0	-	0
21	Travel and transportation of persons	15	75	40	40	0
22	Transportation of things	56	250	250	250	0
23	Rent, communications, and utilities	0	0	0	-	0
23.1	Rental payments to GSA	894	2,000	2,000	2,019	19
23.2	Rental payments to others	72	50	50	50	0
23.3	Communications, utilities, and misc. charges	850	1,800	2,090	2,090	0
24	Printing and reproduction	3	4	4	4	0
25	Other contractual services	0	0	0	-	0
25.1	Advisory and assistance services	0	1,800	0	-	0
25.2	Other services from non-Federal sources	57,193	80,896	82,580	82,622	42
25.3	Other goods and services from Federal sources	2,045	2,193	2,054	1,809	(245)
25.4	Operation and maintenance of facilities	0	0	0	-	0
25.5	Research and development contracts	0	0	0	-	0
25.7	Operation and maintenance of equipment	160	500	500	500	0
26	Supplies and materials	131	500	500	500	0
31	Equipment	89	1,000	1,000	1,000	0

	Object Class	2023 Actual	2024 Annualized CR	2025 Base	2025 Estimate	Increase/ Decrease from 2025 Base
32	Land and structures	0	0	0	0	0
33	Investments and loans	0	0	0	0	0
41	Grants, subsidies and contributions	0	0	0	0	0
42	Insurance claims and indemnities	0	0	0	0	0
43	Interest and dividends	0	0	0	0	0
44	Refunds	0	0	0	0	0
99.9	Total Obligations	67,838	100,000	100,000	100,000	0
	Earned Revenue/Reimbursable Obligations	67,838	100,000	100,000	100,000	0
	Total Obligations	67,838	100,000	100,000	100,000	0
	Personnel Data					
	Full-Time Equivalent Employment:					
	Full-time permanent	33	43	43	43	0
	Other than full-time permanent	0	0	0	0	0
	Total	33	43	43	43	0
	Authorized Positions:					
	Full-time permanent	42	43	43	43	0
	Other than full-time permanent	1	0	0	0	0
	Total	43	43	43	43	0

Department of Commerce
National Technical Information Service
NTIS Revolving Fund
APPROPRIATION LANGUAGE AND CODE CITATION

FY 2025

NTIS Revolving Fund

For expenses necessary in the conduct of business of the National Technical Information Service

Specific Code Number: 15 U.S.C 1151 et seq. and 3704b

Department of Commerce
National Technical Information Service
NTIS Revolving Fund
ADVISORY AND ASSISTANCE SERVICES
(Dollar amounts in thousands)

	FY 2023 Actual	FY 2024 Annualized CR	FY 2025 Estimate
Consulting Services	0	0	0
Management and professional services	0	0	0
Special studies and analysis	0	0	0
Management & Support Services for research and development	0	1,800	0
Total	0	1,800	0

Department of Commerce
National Technical Information Service
NTIS Revolving Fund
PERIODICALS, PAMPHLETS, AND AUDIOVISUAL PRODUCTS
(Dollar amounts in thousands)

	2023 Actual	2024 Annualized CR	2025 Estimate
Periodicals	-	-	-
Pamphlets	-	-	-
Audiovisuals	-	-	-
Total	-	-	-

Department of Commerce
National Technical Information Service
NTIS Revolving Fund
AVERAGE GRADE AND SALARIES

	2023 Actual	2024 Annualized CR	2025 Estimate
Average GS/GM Grade	12	12	13
Average GS/GM Salary	132,394	138,352	141,119

Department of Commerce
National Technical Information Service
NTIS Revolving Fund
IMPLEMENTATION STATUS OF GAO AND OIG RECOMMENDATIONS

31 U.S.C. 720, as amended January 3, 2019, requires the head of a federal agency to submit a written statement of the actions taken or planned on Government Accountability Office (GAO) recommendations to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 180 calendar days after the date of the report.

The Good Accounting Obligation in Government Act (GAO-IG Act), passed on January 3, 2019, (P.L. 115-414) requires each agency to include, in its annual budget justification, a report that identifies each public recommendation issued by GAO and the agency's office of the inspector general (OIG) which has remained unimplemented for one year or more from the annual budget justification submission date. In addition, the Act requires a reconciliation between the agency records and the IGs' Semiannual Report to Congress (SAR).

Section 1. Recommendations for which action plans were finalized since the last appropriations request.
Nothing to Report

Section 2. Implementation of GAO public recommendations issued no less than one year ago that are designated by GAO as 'Open' or 'Closed-Unimplemented.'
Nothing to Report

Section 3. Implementation of OIG public recommendations issued no less than one year for which Final Action has not been Taken or Action Not Recommended has been Taken.
Nothing to Report

Section 4. Discrepancies between this report and the semiannual reports submitted by the Commerce Office of Inspector General or reports submitted by the GAO.
Nothing to Report

Department of Commerce
National Technical Information Service
NTIS Revolving Fund
Description of Tribal Consultations
(Dollar amounts in thousands)

		FY 2025 Base		FY 2025 Estimate		Increase/Decrease from FY 2025 Base	
		Personnel	Amount	Personnel	Amount	Personnel	Amount
National Technical Information Service:	Pos./BA	0	0	0	0	0	0
Information Clearinghouse Program	FTE/Obl	0	0	0	0	0	0

This is N/A for NTIS

ANNUAL PERFORMANCE PLAN/REPORT (APPR) BACKUP

NATIONAL TECHNICAL INFORMATION SERVICE

Overview of Bureau Accomplishments

The National Technical Information Service (NTIS) helps federal agencies make better use of and decisions about data, with data. NTIS provides the support and structure that helps our partners securely store, analyze, sort, and aggregate data in new ways. We use our private-sector partners' knowledge to create new ways of using data to solve problems. The NTIS Joint Venture program works side-by-side with universities, nonprofits, and industry professionals — together, they can experiment with data science technologies before they're available in the marketplace. NTIS continues to expand market penetration into functional areas such as predictive maintenance and data accessibility transformation. NTIS's data-centric mission continued to help Federal programs scale their capacity quickly through multiple strategies, including through the Joint Venture Partner Program, which consists of some of the brightest data science, artificial intelligence, and engineering minds in the nation.

- At HHS OIG, NTIS started a new multi-year partnership with HHS OIG to enhance the OIG's ability to protect the integrity of HHS programs as well as the health and welfare of program beneficiaries, which involves over a one trillion-dollar portfolio. This new effort focuses on four areas – Artificial Intelligence, Robotic Process Automation (RPA), text analytics, and waste, fraud, and abuse detection.

- Within FDA, NTIS partnered with FDA and enhanced real-time interaction with health care practitioners who are involved in public health events and the emergency medical countermeasures, as well as provided FDA with better oversight of the drug supply chain.

- At DOL, NTIS partnered with the DOL OCIO to integrate 15 legacy, data-centric applications, and delivered various economic labor indicators by designing capabilities that enabled DOL to discover, connect, and analyze data more effectively.

- At USAID, NTIS worked with the USAID OCIO and the USAID-President's Malaria Initiative (PMI) and developed a data analytics platform that allows USAID staff to: 1) access diverse data sources, including financial, operational, program and activity management, and activity results and domain-specific micro-data; 2) integrate and manipulate selected data and micro-data; 3) develop models and analyze the data in a collaborative environment; 4) document and curate data integration and analysis results for re-use; 5) share data resources and findings in a real-time, interactive environment; and 6) support the dissemination of analytical dashboards, reports, and papers by USAID. Current results include the reduction in the analysis of Malaria Operational Plans for 27 different member nations from 1 month to 3 days.

Planned Actions through FY 2025

For the upcoming year, NTIS plans to execute the following strategic initiatives –

- Scale the Data Transformation and Access Program into a Government-wide Accessibility Service
- Develop, test, and deploy new data products and services that help Federal Agencies to make governmental information available and accessible;
- Partner with Federal Agencies to increase the number of government-funded, sponsored publications, e.g., reports and studies, and have this information uploaded into the National Technical Reports Library (NTRL), a free public library for the Public.

Analysis of Performance Indicators

In FY 2023, NTIS met all performance targets, except for the yearly average number of days required to complete public-private projects (or Government- Industry projects) entered under the Joint Venture Authority due to the impacts of widespread Federal government focus on both COVID-19 directly and the impacts of COVID-19 on their respective operations.

Explanation of Trends

The increased number of days to process the interagency agreement (IAA) is due to two factors: (1) the increase in the number Joint Venture Partnership (JVP) projects, and (2) the increase in number of days in processing an interagency agreement. In FY23, NTIS' anticipated number of projects and investments exceeded expectations in which significantly increased the workload for our limited staff. In addition, the number of days to process an IAA increased due the dual requirement of processing the paper IAA 7600A/B via legal reviews as wells as processing through Treasury's Government Invoicing System (denoted by "G-Invoicing"). NTIS continues to develop new guidance to streamline this process.

Explanation of Targets for FY 24 and FY 25

NTIS continues to prioritize and expand the services that it offers to support other federal agencies. Therefore, NTIS proposed increase to the number and value of new interagency agreements, reflects its commitment to increasing services to other federal agencies. In addition, NTIS is committed to reducing the number of days to process an IAA by implementing new guidance to streamline the process that will result in improved efficiencies

Progression of the Performance Indicators

The Performance Indicators are derived from data tracked internally at NTIS. This data is used for accounting and reporting purposes in addition it is an indicator of the success of the Joint Venture Program (JVP) and NTIS services to other federal agencies.

Class	Strategic Objective	Performance Indicator	FY 2019 Actual	FY 2020 Actual	FY 2021 Actual	FY 2022 Actual	FY 2023 Actual	FY 2023 Target	FY 2023 Status	FY 2024 Target	FY 2025 Target
Current/ Recurring	1.2	Number of new public-private projects (or Government-Industry projects) entered into under the Joint Venture Authority per year	15	13	14	21	17	8	Exceeded	15	25
Current/ Recurring	1.2	Total investment by the Federal Government on new public-private projects (or Government- Industry projects) entered into under the Joint Venture Authority per year	$34.80M	$20.80M	$27.93M	$37.86M	$36.84M	$30.00M	Exceeded	$52.00M	$60.00M
Current/ Recurring	1.2	Yearly average number of days required to complete public-private projects (or Government- Industry projects) entered into under the Joint Venture Authority	126	104	97	106	115.00	90	Met	85	75

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